



Holland Colours

Packaging Focus

Holland Colours NV

Marketing
&
Technology

Legal Affairs

Finance,
Logistics
& ICT

Purchasing
&
Sourcing

Formulation
Management
& Special
Projects

Plastic
Building &
Construction
market

Plastic
Packaging
market

Silicones/
elastomers
market

Division Americas

Holland Colors
Americas Inc

Holland Colours
Canada Inc

Holland Colours
Mexicana SA de CV

Division Europe

Holland Colours
Apeldoorn BV

Holland Colours
Deutschland GmbH

Holland Colours
France SARL

Holland Colours UK Ltd

Holland Colours
Hungária Kft

Division Asia

P.T. Holland Colours Asia

Holland Colours
Singapore Pte Ltd

HCA Japan Corporation

HCA Holland Colours Shanghai
Representative Office



HCA's Business Philosophy

МЫ ВСЕ
РАЗ^НЫЕ...



- **Персональный подход к решению вопросов**

- Design and promote products (colorants, additives & services) that offer an added value to our customers
- Customers are Partners – both sides must gain from the relationship
- Business is a long-term process
- Honesty and confidentiality of information are paramount
- Treat people with respect

HCA's Product Line

- Pigment Dispersion in non-resinous carriers
 - Holcobatch
 - Holcoprill
- Liquid Dispersions
 - HolcoPET
- Pigment Dispersions in copolymers
 - Holcomax
- Basic Pigments
 - Holcolan, Holcolor
- Liquid Colorants for the Thermoset Market
 - Holcosil, Holcopol, Holcoplast, Holcopox, Holcolest, Holcolyd, Holcolest, Holcowax

Packaging “Who do we supply”

- Producers of packaging materials – primarily based on PET resin
 - Preform & bottle producers
 - PET resin producers
 - Recycling industry

HCA's Packaging Advantages

- Technology
 - Specifically designed for PET
 - Multiple formats
 - Additives
- Global position
 - Manufacturing
 - Customer driven technical service

HCA Packaging Product Offerings

- Pigment Dispersion in non-resinous carriers
 - Holcobatch
 - Holcoprill
- Liquid Dispersions
 - HolcoPET
- Technical Service
- Customer Service

The Holland Colours Package

Holcobatch

Non-resinous micro granule
Transparent/Opaque

Service/Technology

Colorants & Additives specifically designed for PET

Technical services support product, equipment, customer & our customer's customer

Handling options

Global position

Holcobatch -vs- Masterbatches

Advantages

- **Faster incorporation into the resin**
- **Higher preform quality at lower LDR**
- **Higher pigment / additive loading**
- **Additive treatment**
- **Lower cost-of-colouring**

Disadvantages

- **More sensitive dosing environment**
- **HCB requires specific dosing / handling equipment**

The Holland Colours Package

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Handling options

Global position

Holcoprill

Non-resinous granule
Opaque

Holcoprill -vs- Masterbatches

Advantages

- Faster incorporation into the resin
- Higher preform quality
- Higher pigment / additive loading (80-85%)
- Lower dosing levels
- Process neutral

Disadvantages

- Transition technology
 - First of many new formats

The Holland Colours Package

Holcobatch

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Transparent/Opaque

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Holcoprill

Non-resinous granule
Opaque

HolcoPET

Synthetic based liquid
Transparent

HolcoPET

Advantages

- **Carrier compatibility w/PET**
 - Synthetic -vs- edible oil
- **No screw issues**
 - Slippage or “Painting”
- **No known negative processing issues-only positive**
- **Greater statistical distribution**
- **Short lead times**
 - Colour development / Mfg
- **IT JUST WORKS !**

Disadvantages

- **IT is a liquid**
- **Will settle over time**

HCA's Focus

Improve

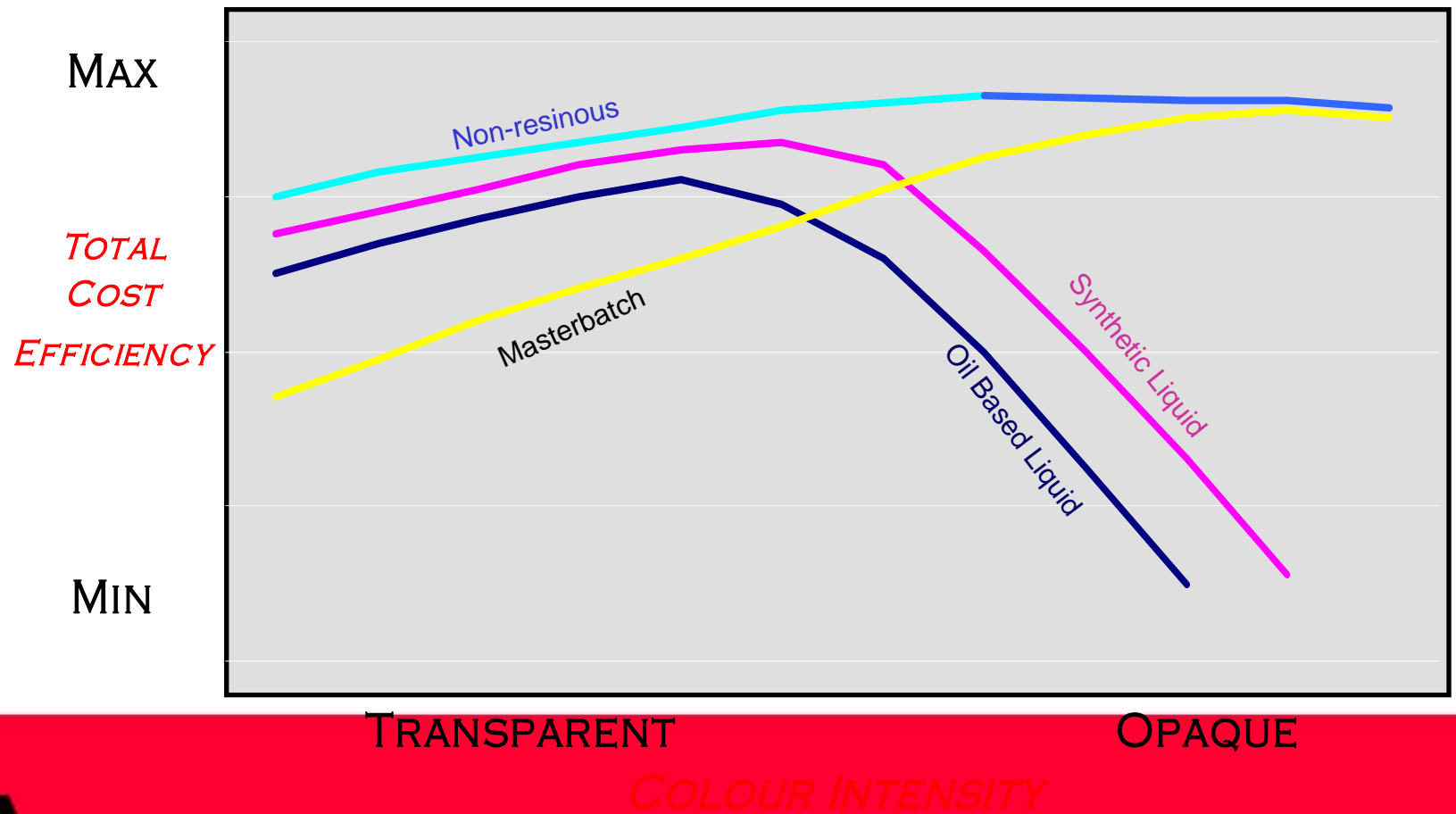
Total Colouring Efficiency
(TCE)

Total Colouring Efficiency

(TCE)

- **Cost-of-Colouring**
 - Price per Kg x dosing level
- **Scrap**
 - Start-up & purge
 - Caused by processing anomalies
 - Inconsistent dosing
 - Colour stoppage
- **Cost-of-Quality**
 - Cost of product out of specification
 - Colour inconsistency
 - Streaks, specks, swirls, blisters, delamination, etc.
- **Cost-of-Processing**
 - Cost-of-processing anomalies when using colour
 - Temperature adjustments
 - Screw speed changes
 - Back pressure corrections
 - Slippage, cycle changes,

TCE by Product Format

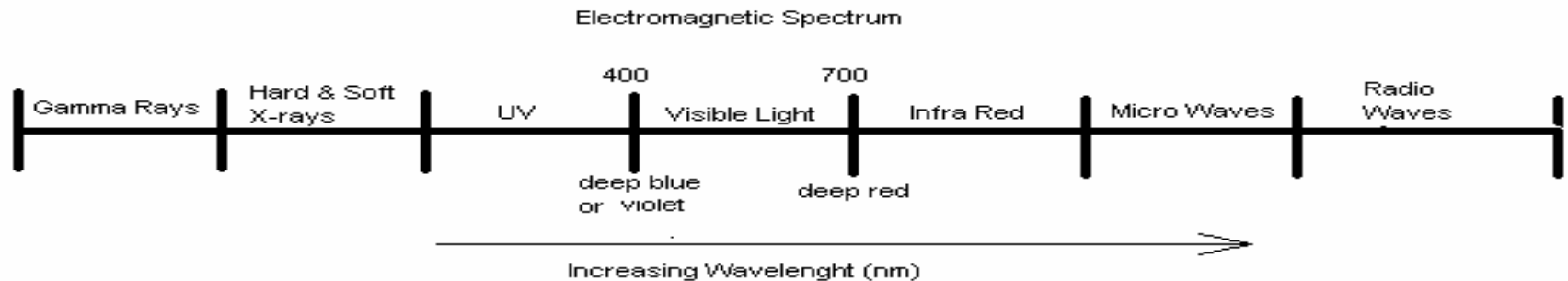


Why HCA

- ❑ Profitability
- ❑ Product performance
 - They work
 - Multiple formats: Solid & liquid
- ❑ Technical expertise
 - Design (new or existing more functional)
 - Redesign
 - To support our products & services
 - To customer's & their customer's needs
 - To be their long term partner & advisor
- ❑ Commitment
 - Customer
 - Industry
 - Suppliers
 - Employees
- ❑ Global positioning

UV radiation

- Electromagnetic radiation between 10 and 400 nanometers: source can be (in)direct sunlight, fluorescent light, etc...

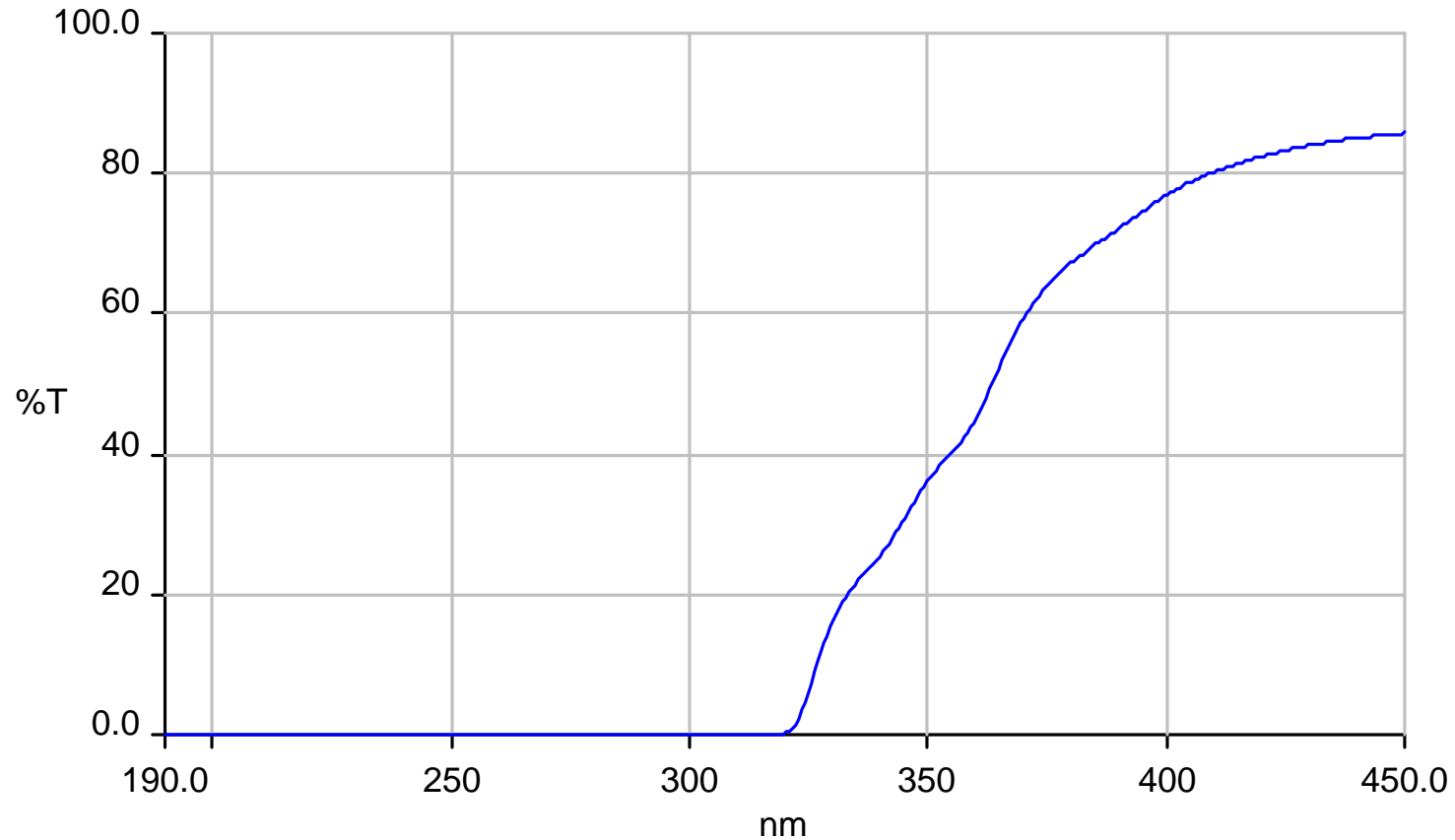


What can be harmed by UV ?

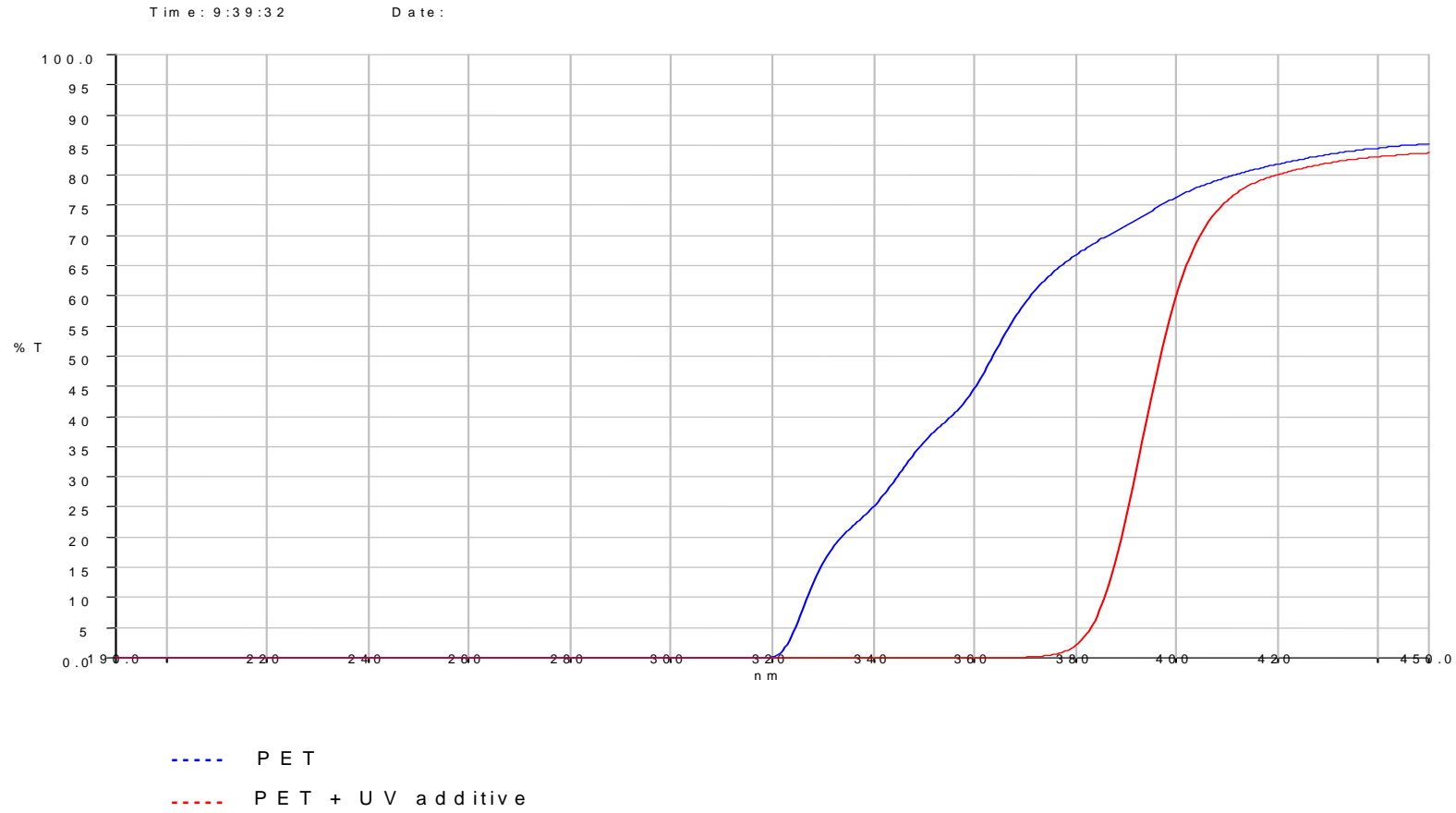
- Components in contents like vitamins, colouring agents, components of taste, etc..
- Fruitdrinks, dairy products , detergents, beer, spices, etc...

“a good container not only *contains* its content, but also *protects* it”

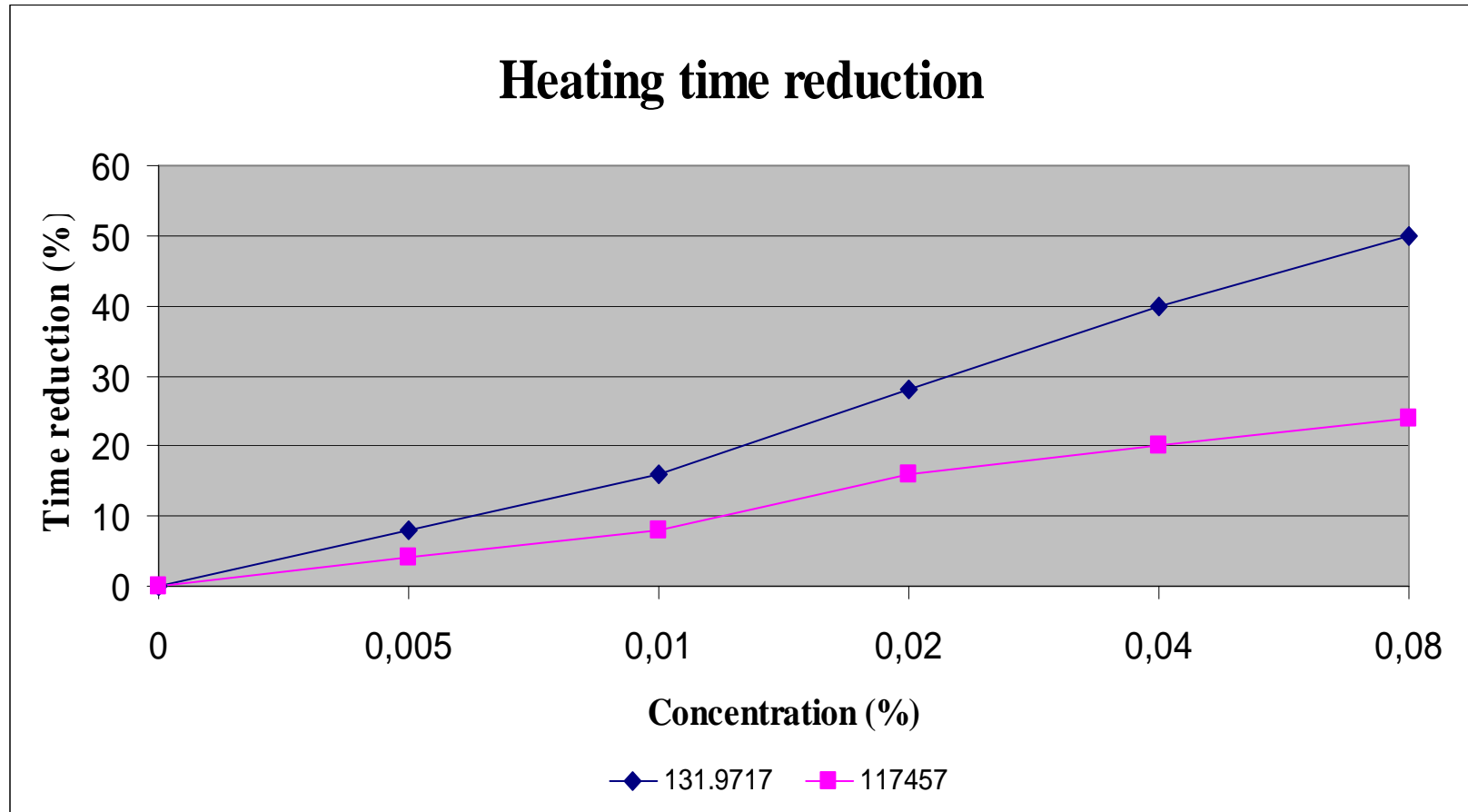
Example of a transmission curve of a natural (clear) PET



Example of a transmission curve of a natural clear PET with an incorporated UV additive



Low energy products



TintMask

- Increased sourcing flexibility
- Increased batch-to-batch colour consistency
- Increased value to end-users of recycled material
- No known processing disadvantages
- No migration or sublimation in high vacuum processing
- On-site colour adjustment at customer's facility

