

Procion[®] Fast H-EXL Dyes

The new hot reactive dye ternary combination for top fastness performance



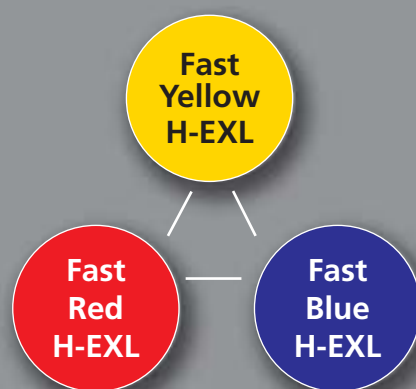
The new **Procion** light fast ternary dyes

Based on trusted H-EXL technology for hot exhaust dyeing, the new Procion Fast H-EXL ternary dyes from DyStar extend the range of shades that can be dyed with high light fastness properties.



The new dyes help you to meet retailers' light fastness specifications and the increasingly important perspiration and wet light fastness tests. The new dyes have high migration properties, ensuring good levelling on difficult substrates. To facilitate shade matching, the ternary combination is based on a golden yellow, a bluish red and a blue. Amber H-EXL can be used to combine low photochromism with high light fastness.

All the new dyes and Amber H-EXL have similar strength and build-up in pale to medium shades. This reduces shade variance resulting from slight weighing errors and increases the accuracy of shade prediction in both laboratory and bulk application.



FastRed H-EXL

- Metal-free bluish red dye with high fixation properties. Reduces effluent load.
- Good light, perspiration/light and wet light fastness (M&S C9A)
- Excellent migration properties (migration index = 98% at 80 °C)
- Good compatibility with other H-EXL dyes (substantivity, reactivity, robustness)
- Good build-up allows use in medium shades

FastYellow H-EXL

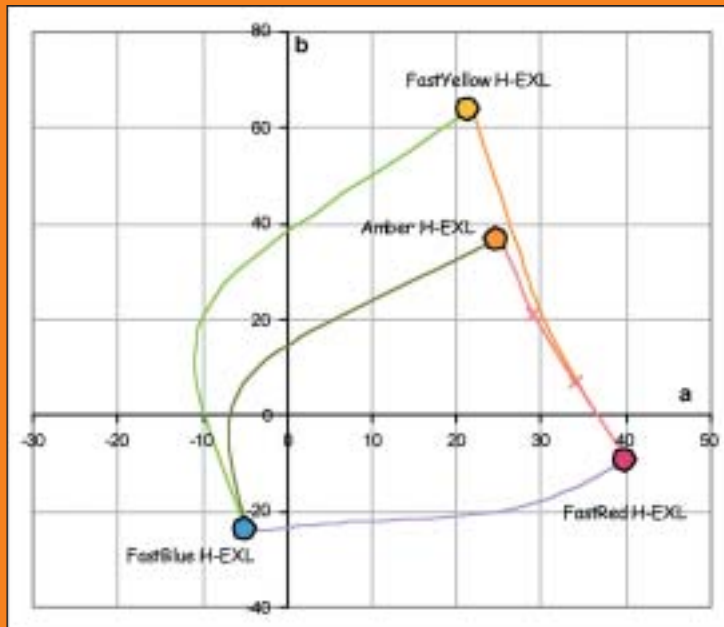
- A new golden yellow component for optimum light, perspiration/light and wet light fastness (M&S C9A) in combination with FastRed H-EXL and FastBlue H-EXL
- Light-related fastness properties are superior to Procion Yellow H-EXL in ternary combinations with FastRed H-EXL and FastBlue H-EXL
- Golden Yellow shade broadens the range of achievable shades and facilitates shade-matching

FastBlue H-EXL

- Copper formazan blue component for high light fastness
- Perfect in combination with other Procion Fast ternary dyes
- Robust dyeing behaviour

The new Procion Fast H-EXL ternary combination widens the range of light fast shades

New ternary combinations:



More shades:

- FastYellow H-EXL
- FastRed H-EXL
- FastBlue H-EXL

covers a wide spectrum of shades

Low photochromism:

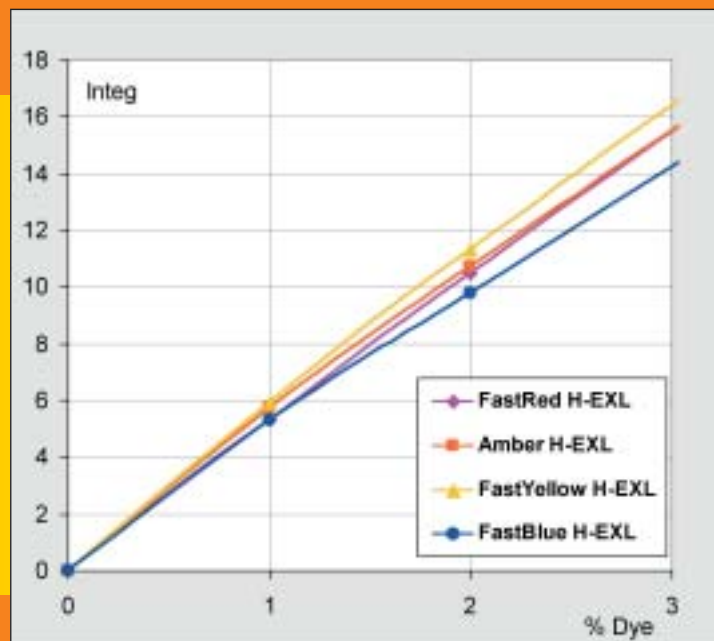
- Amber H-EXL
- FastRed H-EXL
- FastBlue H-EXL

top fastness combined with low photochromism

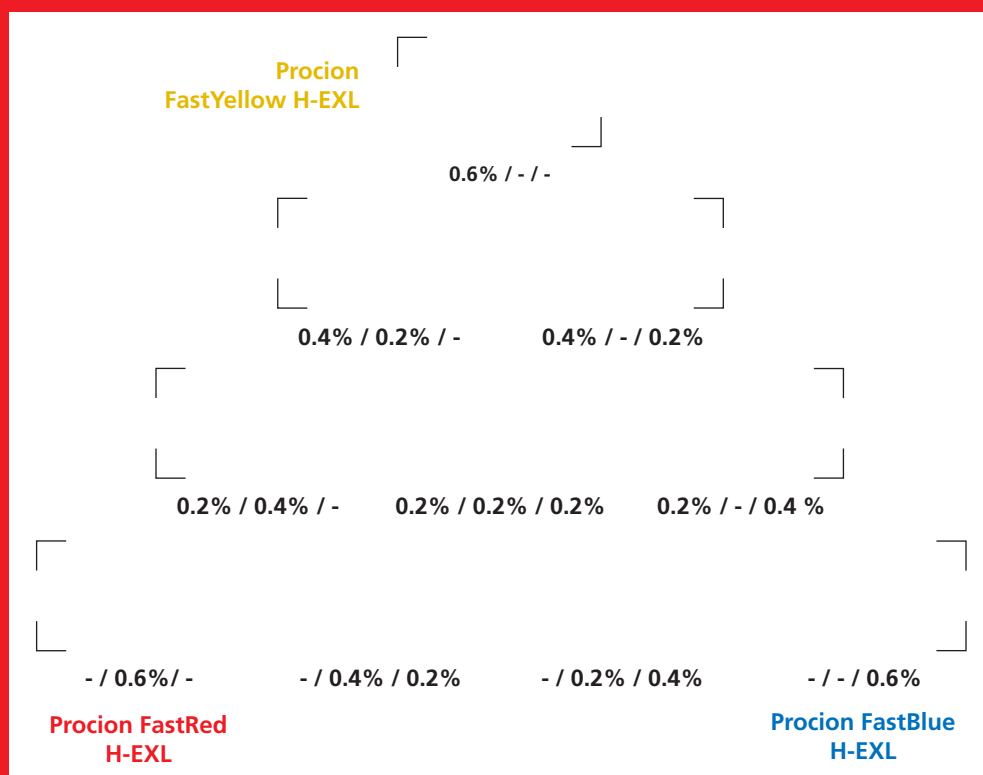
New ternary dyes:

Perfect teamwork

Similar strength and build-up ensures more reliable shade matching and reduces variations in shade caused by slight weighing errors



Top light-related fastness performance in ternary shades



	Light fastness ISO 105 B02	Perspiration light fastness (Nike test)
	5-6	4-5
	4-5	4-5
	4-5	4-5
	4-5	4-5
	4-5	4-5
	4-5	4
	4-5	4
	4	4
	4-5	4
	4-5	4

Fastness data on bleached, mercerised cotton.

Light fastness	standard depth	FastRed H-EXL	FastYellow H-EXL	FastBlue H-EXL
ISO 105-B02 Xenon arc	1 / 25	4-5	4-5	5
	1 / 12	4-5	4-5	5-6
	1 / 6	4-5	5	5-6
	1 / 3	5	5	5-6
	1 / 1	5-6	6	5-6

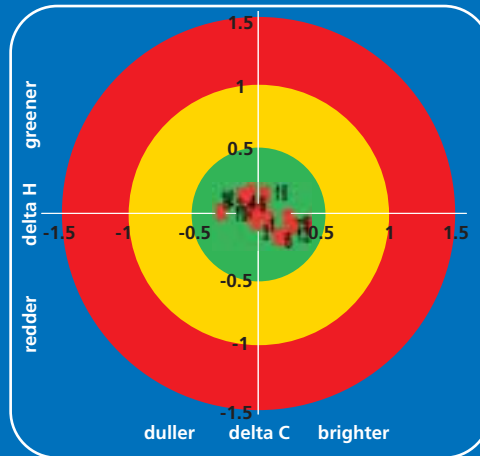
Fastness at 1/1 standard depth		FastRed H-EXL	FastYellow H-EXL	FastBlue H-EXL
Household wash 50 °C ISO 105-C06-B2S	S / CO / PA6.6	5 / 5 / 5	5 / 5 / 5	5 / 5 / 5
Household wash 60 °C ISO 105-C06-C2S	S / CO / PA6.6	5 / 5 / 5	5 / 5 / 5	5 / 4-5 / 5
Wash 50 °C / 120 °F AATCC TM 61-2A	S / CO / PA6.6	5 / 5 / 5	5 / 5 / 5	5 / 5 / 5
Wash 70 °C / 160 °F AATCC TM 61-3A	S / CO / PA6.6	5 / 5 / 5	5 / 5 / 5	4-5 / 4-5 / 4-5
Water fastness ISO 105-E01	S / CO	5 / 5	5 / 5	4-5 / 4-5
Perspiration, alkaline ISO 105E04	S / CO	5 / 4	5 / 4-5	5 / 4
Perspiration, acid ISO 105E04	S / CO	5 / 4-5	5 / 4-5	4-5 / 4
Perspiration, light, alkaline (Nike test)	S	5	5	5
Perspiration, light, acid (Nike test)	S	5	5	5
Chlorinated water fastness (20 mg/l Cl ₂) ISO 105-E03	S	3	3 - 4	3
Mercerisation ISO 105-X04	S / CO	4*B / 5	5*R / 5	4*GD / 5
Hot pressing dry ISO 105-X11-T	Immediate / after 4h	3 / 4-5	4-5 / 5	4 / 5
Dry cleaning fastness ISO 105-D01	S	5	5	4-5
Nitrogen oxides ISO 105-G01	S 1x / 3x	4-5B / 4B	5 / 5	3-4G / 3G

Color Confidence® with Procion Fast H-EXL

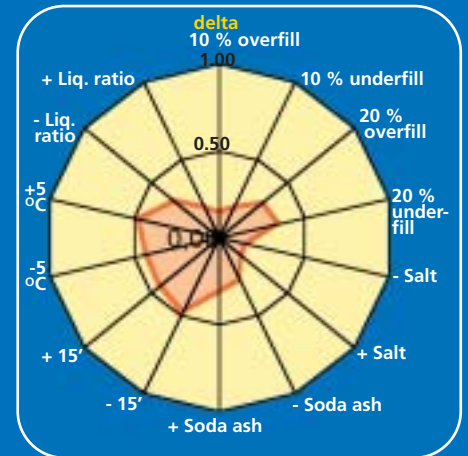
Shades dyed with the new **Procion Fast H-EXL** ternary dyes have excellent compatibility and reproducibility

Procion FastYellow H-EXL	%	0.2
Procion FastRed H-EXL	%	0.2
Procion FastBlue H-EXL	%	0.2
NaCl	g/l	60.000
Soda ash	g/l	15.000
Liquor ratio		1:10
Fixation time	min	45
Process	°C	80 constant

dH and dC variations



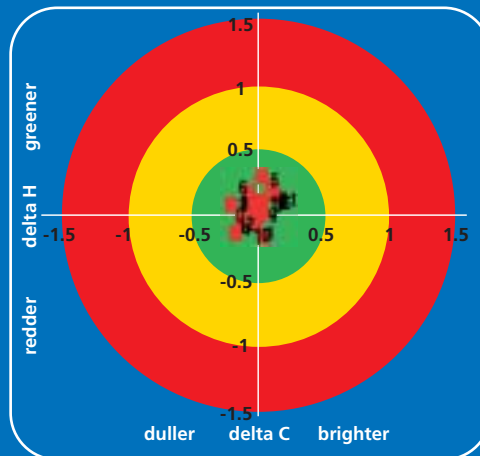
Total colour difference dE



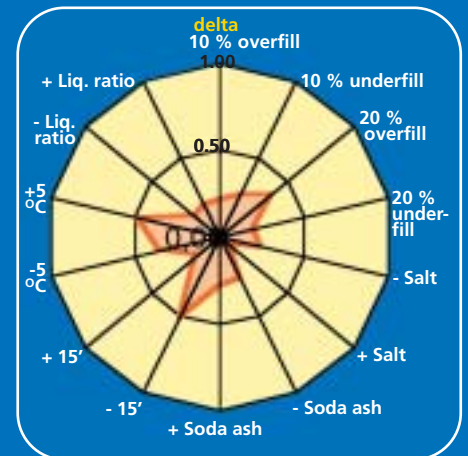
1: Standard	9: Soda ash	+ 10%
2: Overfill + 10%	10: Time	- 15 min
3: Underfill - 10%	11: Time	+ 15 min
4: Overfill + 20%	12: Temperature	- 5 °C
5: Underfill - 20%	13: Temperature	+ 5 °C
6: Salt - 10%	14: Liquor ratio	- 30%
7: Salt + 10%	15: Liquor ratio	+ 30%
8: Soda ash - 10%		

- outside tolerance limits
- critical
- excellent reproducibility

dH and dC variations



Total colour difference dE



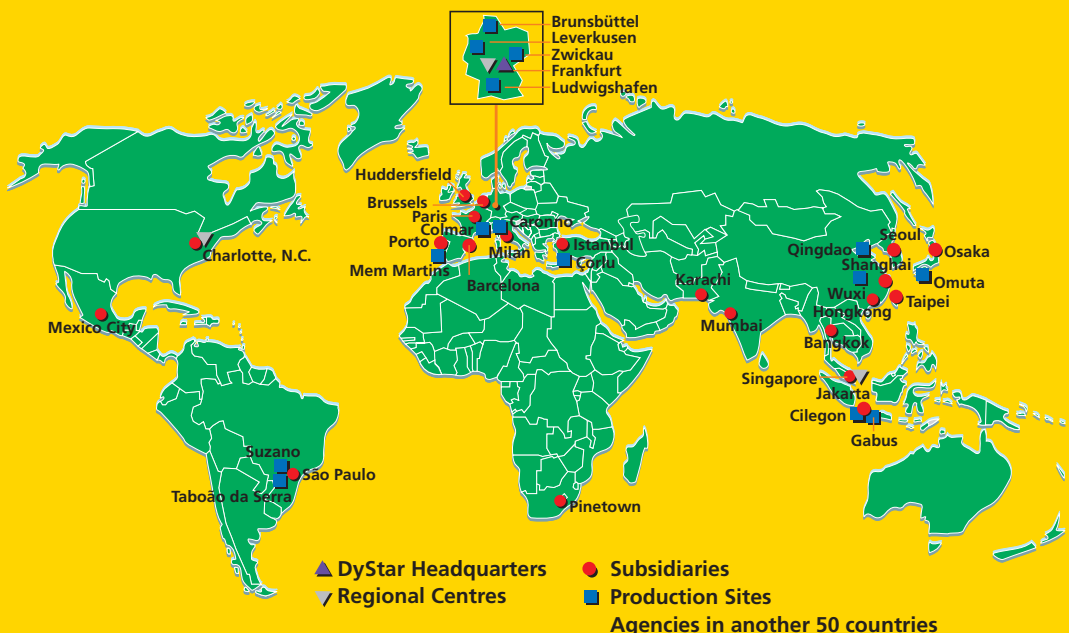
- outside tolerance limits
- critical
- excellent reproducibility

On-tone build-up



Controlled Coloration® with Procion Fast H-EXL

Our products and services help customers worldwide reduce costs, shorten lead times and meet quality specifications. DyStar – Shaping success.



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