

DENAPERS[®] HW

DISPERS DYES WITH HIGH WET
FASTNESS PROPERTIES



DENAPERS® HW Serie

A comfortable, sweat-fast and long lasting clothes allow you to enjoy while doing sports.

The dyes in the Denapers HW series have high wet fabric fastnesses. In this way, sportswear has a high resistance to sweat and very little color changes after washing. Thus, the life of the clothes is longer.



High temperature dyes.



Variety of high washing fastness; excellent dyeing performance.



Good sublimation fastness and thermal migration.



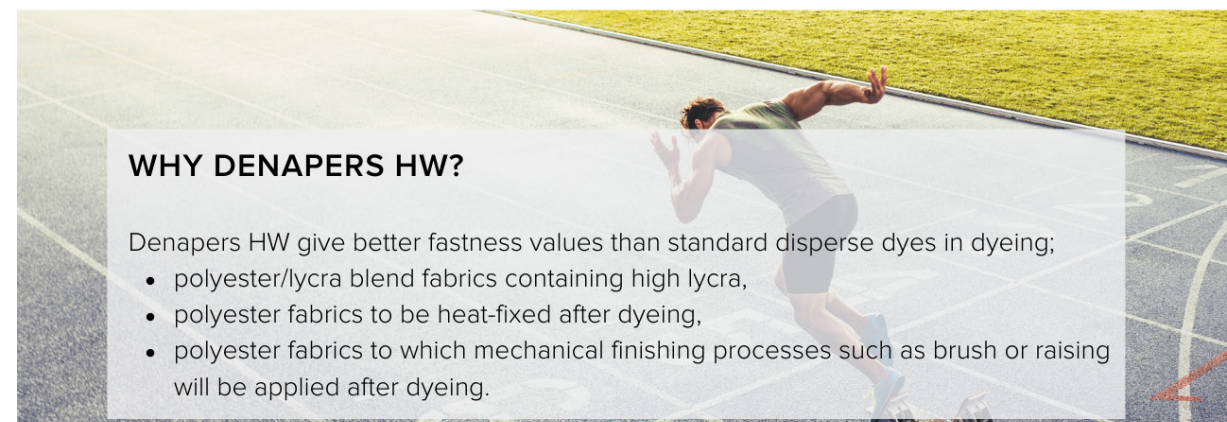
Suitable for dyeing of polyester/cotton, and polyester/viscose blended fabrics.



Staining slightly on different fibers.



Better fastness values than standard disperse dyes after mechanical finishing process



WHY DENAPERS HW?

Denapers HW give better fastness values than standard disperse dyes in dyeing;

- polyester/lycra blend fabrics containing high lycra,
- polyester fabrics to be heat-fixed after dyeing,
- polyester fabrics to which mechanical finishing processes such as brush or raising will be applied after dyeing.

The fastness values of the recipes studied with the HW series were compared with the conventional dyes. The results are presented below.

Test	Conventional Recipe		DENAPERS HW Recipe																																															
	Ingredients	Fastness Values	Ingredients	Fastness Values																																														
Washing Fastness Test (Fixed) ISO 105 C06-C2S	Dispers Yellow %0,4 Dispers Red %0,3 Dispers Navy %3,5	<table border="1"> <tr><th>CA</th><th>CO</th><th>PA</th><th>PES</th><th>PAC</th><th>WO</th></tr> <tr><td>4</td><td>4/5</td><td>3</td><td>4</td><td>5</td><td>5</td></tr> </table>	CA	CO	PA	PES	PAC	WO	4	4/5	3	4	5	5	Denapers Yellow Br.HW %0,38 Denapers Rubine HW %0,24 Denapers Navy HW %2,1	<table border="1"> <tr><th>CA</th><th>CO</th><th>PA</th><th>PES</th><th>PAC</th><th>WO</th></tr> <tr><td>5</td><td>5</td><td>4/5</td><td>4/5</td><td>5</td><td>5</td></tr> </table>	CA	CO	PA	PES	PAC	WO	5	5	4/5	4/5	5	5																						
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Perspiration Fastness Test ISO 105-E04	Acidic <table border="1"> <tr><th>CA</th><th>CO</th><th>PA</th><th>PES</th><th>PAC</th><th>WO</th></tr> <tr><td>4/5</td><td>4/5</td><td>3/4</td><td>4/5</td><td>4/5</td><td>4/5</td></tr> </table> Alkaline <table border="1"> <tr><th>CA</th><th>CO</th><th>PA</th><th>PES</th><th>PAC</th><th>WO</th></tr> <tr><td>4/5</td><td>4/5</td><td>3/4</td><td>4/5</td><td>5</td><td>5</td></tr> </table>	CA	CO	PA	PES	PAC	WO	4/5	4/5	3/4	4/5	4/5	4/5	CA	CO	PA	PES	PAC	WO	4/5	4/5	3/4	4/5	5	5	Acidic <table border="1"> <tr><th>CA</th><th>CO</th><th>PA</th><th>PES</th><th>PAC</th><th>WO</th></tr> <tr><td>5</td><td>5</td><td>4/5</td><td>5</td><td>5</td><td>5</td></tr> </table> Alkaline <table border="1"> <tr><th>CA</th><th>CO</th><th>PA</th><th>PES</th><th>PAC</th><th>WO</th></tr> <tr><td>5</td><td>5</td><td>4/5</td><td>5</td><td>5</td><td>5</td></tr> </table>	CA	CO	PA	PES	PAC	WO	5	5	4/5	5	5	5	CA	CO	PA	PES	PAC	WO	5	5	4/5	5	5	5
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Water Fastness Test ISO 105-E01	Acidic <table border="1"> <tr><th>CA</th><th>CO</th><th>PA</th><th>PES</th><th>PAC</th><th>WO</th></tr> <tr><td>4/5</td><td>4/5</td><td>3/4</td><td>4</td><td>5</td><td>4/5</td></tr> </table>	CA	CO	PA	PES	PAC	WO	4/5	4/5	3/4	4	5	4/5	Acidic <table border="1"> <tr><th>CA</th><th>CO</th><th>PA</th><th>PES</th><th>PAC</th><th>WO</th></tr> <tr><td>5</td><td>5</td><td>4/5</td><td>5</td><td>5</td><td>5</td></tr> </table>	CA	CO	PA	PES	PAC	WO	5	5	4/5	5	5	5																								
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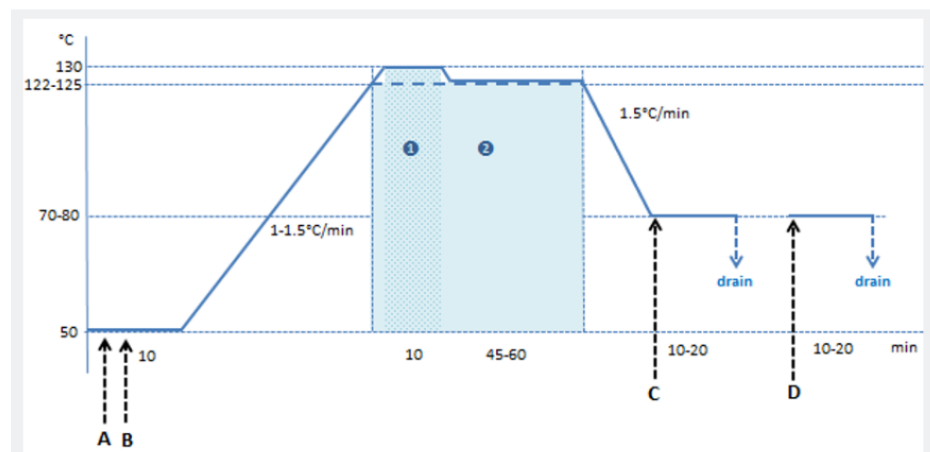
Dye Selection



		G. Yellow HW 1.0% 2.0%	Red HW 1.0% 2.0%	Rubine HW 1.0% 2.0%	Blue HW 1.0% 2.0%	Navy HW 1.0% 2.0%	Black HW 3.0% 5.0%
C.I. Number		Mix	Mix	Mix	Mix	Mix	Mix
pH Dependency		3-5	4-5	4-5	4-5	3-5	4-5
Energy Level		H	H	H	H	H	H
Washing Fastness	AC	4	4-5	4-5	4-5	4	4-5
	CO	5	4-5	4-5	4-5	5	5
	PA	4	4-5	4-5	4-5	5	4-5
	PES	5	4-5	4-5	4-5	5	5
	PAN	5	4-5	4-5	4-5	5	5
	WO	4	4	4	4-5	3	4-5
Light Fastness	1/1 SD	7	6	6	6	6	6-7
Sublimation Fastness		4-5	4	4	4-5	4-5	4-5
Fastness to Chlorined Water	20 ppm	4-5	4-5	3-4	4-5	4	4-5
Dyeing Properties	HT	★	★	★	★	★	★
	Termosol	★	★	★	★	★	★
	Carrier	★	★	★	★	★	★
	Printing	★	★	★	★	★	★

DYEING METHOD OF PES/EL BLENDS

DENAPERS® HW dyes are recommended for dyeing of PES/EL fibers.



A	Denpol Pes Konz	1g/lt
	Denpol HT	0,25g/lt
B	Denacid BT New	ph 4,5
	DENAPERS HW	x g/lt
C	Dng Clean PN	0,5-4,5%owf (pale-dark)
	pH 3,5 20 min. at 70-80°C	
D	Caustic (NaOH 38°Be)	3g/l
	Dng Clean AR	1-2g/l
	20 min. at 70-80°C	

*1st method	10 min at 130°C and 20-30 min at 125°C (if the elastane fiber is durable at HT)
*2nd method	45-60 min at 125°C (Preferred process)

Rinse:
10 min at 70°C rinse warm, cold and drain

Neutralize:
5 min pH: 6- 6.5 neutralization with acetic acid at 50°C, 10 min rinse and drain

*Without reduction cleaning; A + B + rinse

*If reduction cleaning desired; A + B + C + rinse + neutralize

DATA ABOUT FASTNESS PROPERTIES:

The fastness properties indicated in the shade card were determined on bleached, mercerised cotton with the concentrations mentioned.

Washing Fastness	ISO 105 C06- C2S	AC= staining on acetate
Light Fastness	DIN EN ISO 105 B02	CO= staining on cotton
Sublimation Fastness	ISO 105 P01	PA= staining on polyamide 66
Fastness to Chlorined Water	ISO 105 E03	PES= staining on polyester
		PAN= staining on polyamide/elastane
		WO= staining on wool

DATA ABOUT DYEING PROCESS:

HT	High-temperature process (130 °C)
Carrier	Dyeing process at 98 – 110 °C with the addition of carriers
Thermosol	Continuous process



The appearance of dyes can vary due to different manufacturing methods. However, this does not affect the colour on the textile or the dye properties and fastnesses. The colour intensity is normally set to 100 %.

ENERGY LEVEL:

L = low
M = medium
H = high

ECOLOGICAL INFORMATION:

The DENAPERS HW range fully complies with the requirements on the limits for impurities or by-products as specified in the MRSL of ZDHC (current version 2.0, December 2022, refer to www.roadmaptozero.com).

The data contained in this shade card is given to the best of our knowledge and belief. They provide information on the properties of our products, but they don't guarantee specific product properties. All information is subject to change without notice.



Colorful and Smart Solution

