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At DyStar, our products and services help customers worldwide reduce costs, shorten lead times and meet stringent quality and ecological specifications.



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econfidence[®]
from DyStar[®]

DyStar[®]

Dianix[®] Dry Dyes

Water-free polyester dyeing with supercritical carbon dioxide



Dyeing with supercritical carbon dioxide (CO₂ dyeing) is a water-free coloration method. The increasing worldwide demand for textiles which are produced with minimal impact on the environment led to commercialization of these dyeing method. Next to the machinery manufacturer, the introduction of CO₂ dyeing to the textile industry is driven and accelerated by retailers & brands.

Dye selection

The dissolving capacity of supercritical carbon dioxide corresponds to that of the less polar organic solvents. The suitability of disperse dyes for dyeing with supercritical CO₂ is depending on following parameters:

Solubility in CO₂ / Solubility speed / Saturation in CO₂ / Diffusion speed

Since impurities are unfavorable for the dyeing process with supercritical CO₂, purified disperse dyes have to be used.

Shade illustration of Dianix[®] Dry dyes on polyester knitted fabric (75D72F)

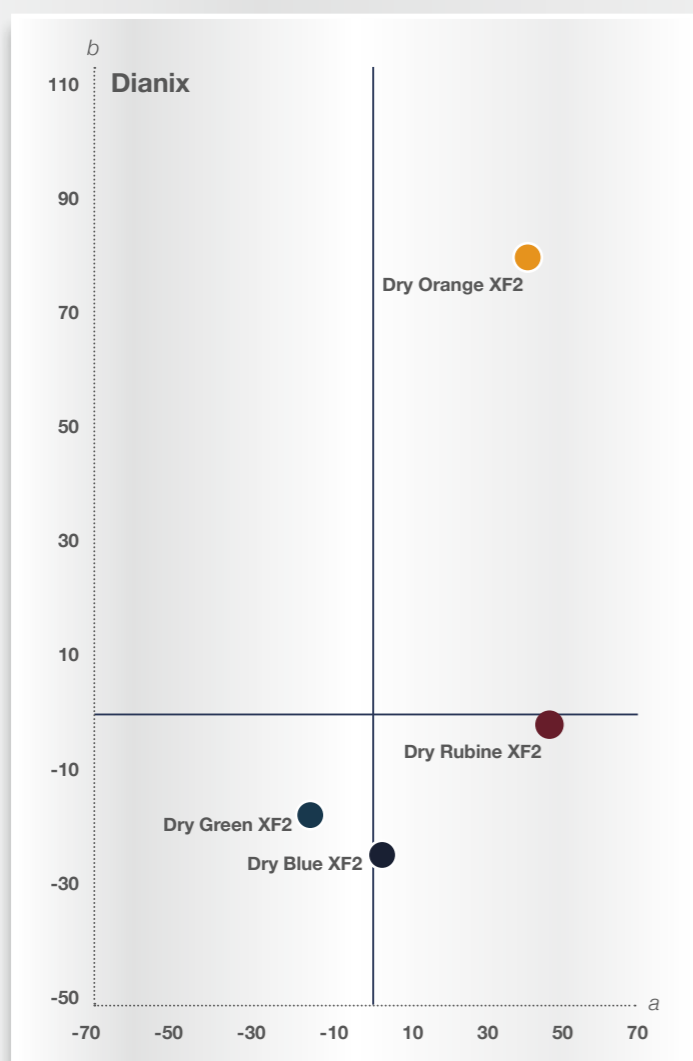
0.50% Dianix Dry Orange XF2

1.00% Dianix Dry Rubine XF2

1.00% Dianix Dry Blue XF2

1.00% Dianix Dry Green XF2

Dianix[®] Dry selection for highest levels of wet-fastness



Fastness properties of Dianix[®] Dry dyes on polyester knitted fabric (75D72F)

Dianix	%	Fastness to Washing Nike [®] 50°C PA/PET/CA	Fastness to Water PA/PET/CA	Fastness to Perspiration Acid PA/PET/CA	Fastness to Perspiration Alkaline PA/PET/CA	Fastness to Light Nike method
Dry Orange XF2	0.25	4-5/4-5/4-5	4-5/4-5/4-5	4-5/4-5/4-5	4-5/4-5/4-5	4
	0.50	4/4-5/4-5	4-5/4-5/4-5	4-5/4-5/4-5	4-5/4-5/4-5	4
Dry Rubine XF2	0.50	4-5/4-5/4-5	4-5/4-5/4-5	4-5/4-5/4-5	4-5/4-5/4-5	3-4
	0.75	4-5/4-5/4-5	4-5/4-5/4-5	4-5/4-5/4-5	4-5/4-5/4-5	4
	1.00	4-5/4-5/4-5	4-5/4-5/4-5	4-5/4-5/4-5	4-5/4-5/4-5	4
	1.50	4-5/4-5/4-5	4-5/4-5/4-5	4-5/4-5/4-5	4-5/4-5/4-5	4
Dry Blue XF2	0.50	4-5/4-5/4-5	4-5/4-5/4-5	4-5/4-5/4-5	4-5/4-5/4-5	3-4
	0.75	4/4-5/4-5	4-5/4-5/4-5	4-5/4-5/4-5	4-5/4-5/4-5	4
	1.00	4/4-5/4-5	4-5/4-5/4-5	4-5/4-5/4-5	4-5/4-5/4-5	4
	1.50	4/4-5/4-5	4/4-5/4-5	4/4-5/4-5	4/4-5/4-5	4
Dry Green XF2	0.50	4-5/4-5/4-5	4/4-5/4-5	4/4-5/4-5	4/4-5/4-5	4
	0.75	4/4-5/4-5	4-5/4-5/4-5	4/4-5/4-5	4-5/4-5/4-5	3-4
	1.00	4/4-5/4-5	4-5/4-5/4-5	4-5/4-5/4-5	4-5/4-5/4-5	4
	1.25	4/4-5/4-5	4-5/4-5/4-5	4-5/4-5/4-5	4-5/4-5/4-5	4
	1.50	3-4/4-5/4-5	4/4-5/4-5	4-5/4-5/4-5	4-5/4-5/4-5	3-4