

# WATER-LESS, SUSTAINABLE, ENVIRONMENT FRIENDLY, GREEN TECH. FOR TEXTILE DYEING & FINISHING USING SUPERCRITICAL FLUID

(USA PATENT No. US11015289B2, INDIAN PATENT No. 298213)

'Deven Supercriticals' is an innovation driven company dedicated to Supercritical (SC) Carbon Dioxide (CO<sub>2</sub>) based processing for more than two decades (since 1998). For the first time in the world, we have developed & patented an innovative solution for the most efficient SC CO<sub>2</sub> based sustainable, single step **Dyeing as well as Finishing technology** suitable for various fabric types (Man-made, Natural and Blended textiles).

Our revolutionary SC CO<sub>2</sub> based, water-less Dyeing and Finishing technology ( **SupraUno™**) allows the use of conventional / traditional dyes, improves dye utilization, easy scale-up and less than half dyeing time vis-a-vis prior-art SC CO<sub>2</sub> based dyeing processes. It further allows single bath dyeing for blends, avoids reduction clearing for polyester, no salt used for cotton, extensive reduction in use of auxiliary chemicals: substantially reducing pollution, water & energy load.

**We have made the SC CO<sub>2</sub> technology truly viable, versatile and simple:**

	Features	DEVEN SUPERCRITICALS Patented SupraUno™ SC CO <sub>2</sub> Technology	Prior-Art / Conventional SC CO <sub>2</sub> Technologies
<b>A</b>	Which types of <b>Textiles</b> can be Dyed?		
	<b>Polyester</b>	✓	✓
	<b>Nylon</b>	✓	✗
	<b>Cotton</b>	✓	✗
	<b>Viscose &amp; other modified Cellulose</b>	✓	✗
	<b>Polyester-Cotton Blends</b>	✓	✗
<b>B</b>	Suitability of <b>Conventional /Traditional Dyes</b> presently used in water based dyeing?	✓	✗
<b>C</b>	Dyes suitable for the process:		
	<b>Disperse Dye</b>	✓	✓
	<b>Reactive Dye</b>	✓	✗
	<b>Acid Dye</b>	✓	✗
<b>D</b>	Change & optimise the shade by using <b>In-house Trichrome Recipe?</b>	✓	✗
<b>E</b>	<b>Solubility of Dyes</b> in SC CO <sub>2</sub>	HIGH	LOW
<b>F</b>	<b>Dye Utilisation / Dyeing Efficiency</b>	HIGH	MODERATE
<b>G</b>	<b>Finishing possible along with Dyeing step?</b>	✓	✗
<b>H</b>	<b>Batch Time (T)</b>	ABOUT HALF (T/2)	LONG (T)
<b>I</b>	<b>Scale-up</b> to Commercial Scale	EASY	DIFFICULT
<b>J</b>	<b>Final Shade Build-up</b>	BASED ON RECIPE	CHANGES WITH BATCH TIME
<b>K</b>	<b>Batch to batch Consistency</b>	EASY	DIFFICULT

**Website: [www.scfe.in](http://www.scfe.in)**

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