

## How to Dye Cotton/Spandex<sup>®</sup> Blends Using Orcolitefast<sup>™</sup> and OrcoChrome<sup>™</sup> Dyes in a Two-Bath Procedure

**Orcochrome<sup>™</sup>** (Mordant) dyes offer the best washfastness and coverage properties on Spandex<sup>®</sup>. However, the process requires sodium bichromate which leaves chrome in the dyebath. It is highly recommended that the local municipalities are contacted before using this procedure to confirm that the resulting chrome content in the effluent will be within acceptable limitations.

In any procedure involving Spandex<sup>®</sup>, the temperature should not exceed 200°F(93°C) as it may degrade the integrity of the Spandex<sup>®</sup>.

Because there is a small selection of mordant dyes that are applicable to Spandex<sup>®</sup>, this procedure is generally limited to blacks. The recommended product for this is **Orcochrome Black T 160%<sup>™</sup>**.

1. Prepare goods as necessary. Since the Spandex<sup>®</sup> typically comes from the factory in a clean white state, a general prescour should be sufficient. The cotton portion will probably require a scouring and possibly a bleaching if light or pastel shades are desired.
2. The first step is to dye the cotton portion of the fabric. In a bath at 110- 115°F(43-46°C) add:
  - 0.5 % owg Soda Ash
  - 10.0 % owg Glauber's Salt
  - X % owg **Orcolitefast<sup>™</sup>** dyes properly prepared
3. Raise temperature to 190-195°F(88-90°C) slowly and run for one hour.
4. After initial 30 minutes at this temperature, salt should be added in small increments to promote level exhaustion of the direct dye onto the cotton. A maximum overall amount should be 30 % owg.
5. Cool back to 120°F(49°C) and overflow rinse cold until clear.
6. The second step of the dyeing procedure applies the **Orcochrome<sup>™</sup>** (mordant) dye to the Spandex<sup>®</sup>. In a fresh bath 100°F(38°C), add:
  - 0.5 % owg **Orco Salt O Solution<sup>™</sup>**
  - 2.0 % owg Acetic Acid 56%

X % owg **Orcochrome™** dyes properly prepared

7. Circulate bath for 10 minutes.
8. Slowly bring the temperature to 190-195°F(88-90°C) and run for 1-1 ½ hours.
9. During dyeing, 2-4 % owg Formic Acid should be added to promote exhaustion of the mordant dye onto the spandex.
10. Rinse and make new bath containing:
  - 4 % owg Formic Acid
  - 1-3 % owg Sodium Bichromate(depending on depth of shade)
11. Run for one hour at 190-195°F(88-90°C).
12. Overflow rinse well, drop bath, and set scour bath at 150°F(65°C) containing:
  - 0.5 % owg **Orco Salt O Solution™**
  - 0.2 % owg Acetic Acid 56%
13. Run for 20 minutes.
14. Overflow rinse well and drop bath.