

# Brand/Retailer Interest in Fade Resist Performance of Cotton Garments

There is currently interest from retailers/brands in color retention/fade resists performance to multiple wash/wear cycles on cotton garments.

The problem of color fade of cotton garments started when leading detergent manufacturers developed new detergents with bleach activators (TAED in Europe and SNOBS in USA) to encourage garment cleansing at lower care label temperatures (50 → 40° C and now with a continuing trend of 30 or even 20° C) to reduce carbon footprint.

Problems associated with a color fade of reactive dyed cotton garments were identified to be related to specific dye chromophores generally where an azo bridge is not or only partially protected with sulphonic acid groups in both ortho positions to the -N=N- group.

International tests were developed which were designed to screen dyes to identify those with chromophores which are sensitive to oxidative bleach :

ISO 105 C09 (Activator TAED)

AATCC 190 (Activator SNOBS)

Some leading brands have incorporated ISO 105 C09 into their fastness performance specifications e.g. Marks & Spencer C10A.

Other retailers are asking for a minimal change of shade to multiple Home Launderings (typically 20 wash cycles with intermediate drying). The AATCC TM 135 test procedure has been quoted on several occasions by American retailers which actually is described in the AATCC manual *Dimensional Changes of Fabrics after Home Laundering* and was not designed as a test protocol for assessment of shade change.

Problems associated with TM 135 if this test protocol is used additionally to assess color change :

- Often the washing machine is connected to an uncontrolled municipal water supply which may contain varying amounts of residual chlorine from the municipal water treatment process.
- Some retailers are specifying detergents for TM 135 containing OBA which causes large shade changes on pale to medium shades.

The problems associated with color fade after multiple wash cycles in activated bleach detergents may be solved by appropriate dye selection.

DyStar can provide the best dye formulations to promote Color Confidence® and Fade Resist. We were involved in the development of the internationally accepted test protocol ISO 105 C09 and all our reactive dyes have been tested. Results are available in [ColorXPT®](#)

The brand or retailer would set the performance requirement which is normally **Grey Scale**

**3-4 on tone** fade.