

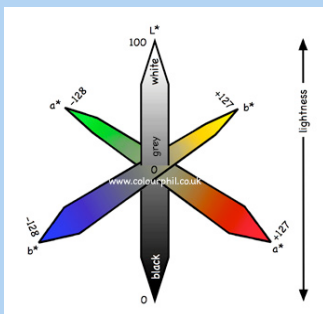


Garment Staining and Marking

STEPS



1. YELLOW ON WHITE



2. TRISTIMULUS LIGHT RESPONSE

Eurofins Dermatest Pty Ltd
 20 - 22 King St
 Rockdale NSW Australia
 ph 61 2 9556 2601
info@dermatest.com.au
www.dermatest.com.au

To confirm the lack of staining potential of a test product on garments

Supportable Claim

- **Non-staining Formula**
- **No yellow stains**
- **No white marks**

Most commonly used for testing of antiperspirant staining or staining by sunscreen formulations.

Source of Staining

Direct Staining may occur due to pigments or Zinc or Titanium actives present in the product formulation. Reactive staining may occur due to interaction between antiperspirant actives, often aggravated by ironing of the garment.

In some sunscreen formulations, ingredients may degrade or react together to form coloured compounds.

Methods

White or black cotton t-shirts are matched to test subject size and coded.

The t shirts are machine cold washed twice in order to remove any manufacturing residues.

Target for staining is ...

1. For sunscreens and pigmented products, the collar area.
2. For antiperspirants the underarm area.

Recruitment

Over the age of 18 years, randomly selected.

- Informed of the nature of the test
- Written informed consent prior to induction.

On recruitment, test subjects undertake a 7 day "dry out" period where no conflicting product is used

in the vicinity of the target area.

Measurements

t=0 measurements of the initial colour of the test area of the garment are taken.

Where two test products are involved (under arm) test products are randomly assigned to left or right. Test subjects are instructed to apply the products as directed - usually twice per day- morning and afternoon.

The garment must be worn all day on 5 occasions over a period of 14 days.

Standardised washing powder is provided and subjects are required to cold water wash at the end of each day.

After 14 days, the subjects return to the lab with the washed and dried garment as well as product and washing powder.

t=1 garment colour measurements are again taken.

A colour regression step can be added in order to determine permanency of the stain.

Documentation

Start and end colour values are compared and Δ change in $L^*a^*b^*$ values calculated. Each colour component is documented separately (see Fig 2) An detailed in-use diary is maintained by each test participant. Usage of product and washing powder is quantified for compliance audit.