

# Perspirometer

COLOUR FASTNESS TESTER



PHENOLIC YELLOWING TESTER

# Perspirometer

## AND INCUBATOR

The *Perspirometer* applies a specified pressure to a package of test specimens separated by acrylic or glass plates. The spring loaded mechanism ensures the correct pressure is maintained when the loading Weight is removed. Two loading Weights are available to accommodate the requirements of the ISO and AATCC test methods.

Manufactured from high grade stainless steel, the *Perspirometer* is rigid and corrosion resistant.

The *Incubator* provides, and accurately maintains, the controlled environmental conditions for the duration of the test specified by the standards.

ISO Certificates of Calibration are available which provide validation of instrument performance and specification.

### **Colour Fastness to Perspiration, Water and Sea Water**

To test colour fastness to perspiration, specimens (fabric, yarn or fibre) in contact with Multifibre Adjacent Fabric, are treated in two different solutions containing histidine, one alkaline and one acidic.

The specimens are subsequently drained and placed under constant pressure between separator plates in the Perspirometer. Up to 20 test specimens can be accommodated.

The units are then placed in an Incubator for 4 hours at 37°C (body heat).

After drying, change in colour of the specimens and staining of the adjacent fabrics are assessed with Grey Scales.

*Separate* Perspirometer units must be used for alkaline and acidic tests to avoid chemical interaction.

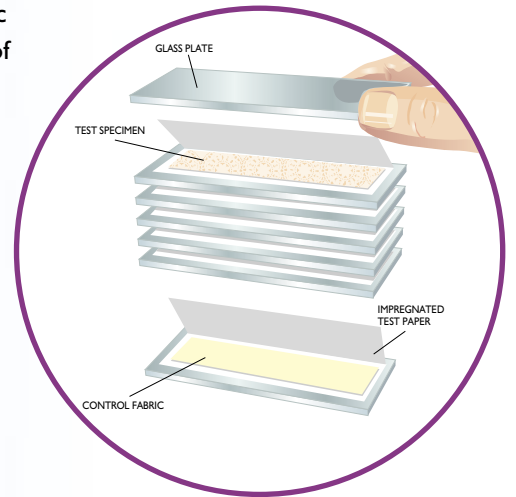


## Phenolic Yellowing

This is a simple, predictive test, typically used to assess the potential of white or pastel-coloured textiles to transit or storage yellowing. The test is specific to phenolic yellowing, that is the discolouration of textiles caused by the action of oxides of nitrogen on yellowable phenols. It is not intended to deal with the many other causes of discolouration, e.g. the migration or fading of optical brightening agents, gas fume fading, the oxidation of fabric lubricants and so on.

Based on a technique originally developed by Courtaulds Research, the *HEALS Phenolic Yellowing Test Kit* has proved to be an effective means of controlling the quality of white and pastel-coloured goods and has considerably reduced the incidence of yellowing complaints arising from storage yellowing.

Launched in 1995, the *HEALS Phenolic Yellowing Test Kit* has since become established as the *benchmark industry standard* and is widely specified by a number of major retailers.



The risk of phenolic yellowing is evaluated by a contact test. Each test specimen is folded between a phenol-impregnated test paper. The test package consists of 5 test specimens and one standard control fabric wrapped and sealed in BHT – free polythene film. Constant pressure on the package is maintained by the *Perspirometer*, and the specified environmental conditions are provided by the *Incubator*.

On removal from the Incubator the specimens are compared with their originals and the intensity of yellowing assessed using the standard Grey Scale for Staining.

## Standards

<b>COLOUR FASTNESS TO PERSPIRATION, WATER AND SEA WATER</b>	
ISO 105 E01 – Colour Fastness to Water	
ISO 105 E02 – Colour Fastness to Sea Water	
ISO 105 E04 – Colour Fastness to Perspiration	
BS 1006: UK-TB – Colour Fastness to Shampooing of Textile Floor Coverings	
BS 1006: UK-TJ – Colour Fastness to Water of Textile Floor Coverings	
AATCC 15 – Color Fastness to Perspiration	
AATCC 106 – Color Fastness to Water: Sea	
AATCC 107 – Color Fastness to Water	
<b>PHENOLIC YELLOWING</b>	
M&S	C20B
TESCO	TM/137/01

## Technical data

<b>INCUBATOR HX30</b>	
Air Circulation	Fan assisted
Internal Dimensions	295mm (high) x 300mm (wide) x 320mm (deep)
Usable Volume	30 litres
Capacity	Up to 4 Perspirometer Units
Interior	Corrosion-resistant stainless steel
No. of Shelves	2 (removable)
Temperature Range	Ambient + 10°C – 220°C (110V : 180°C)
Temperature Stability	± 0.2°C
Controls	Proportional Digital Temperature Controller – displays preset and actual temperatures
Larger Incubators/Ovens are available	

# PERSPIROMETER & INCUBATOR...

## How to Order

### PERSPIROMETER & INCUBATOR

<b>750-601</b>	<b>Perspirometer</b> One unit - <i>without weight and without separator plates</i>
<b>730-420</b>	<b>Incubator Model HX30</b> – 230V 50/60Hz
<b>730-422</b>	<b>Incubator Model HX30</b> – 110V 60Hz
<b>730-421</b>	<b>Incubator Model HX60</b> – 230V 50/60Hz
<b>730-423</b>	<b>Incubator Model HX60</b> – 110V 60Hz
<b>201-730</b>	ISO Certificate of Calibration for Incubator/Oven

### CONSUMABLES AND ACCESSORIES FOR COLOUR FASTNESS

<b>750-602</b>	ISO Weight
<b>201-290</b>	ISO Certificate of Calibration for ISO Weight
<b>750-603</b>	AATCC Weight
<b>201-290/1</b>	ISO Certificate of Calibration for AATCC Weight
<b>750-604</b>	Pack (21) Acrylic Separator Plates
<b>702-500</b>	Roll (10m) HEAL'S Multifibre Adjacent Fabric DW
<b>702-501</b>	Roll (25m) HEAL'S Multifibre Adjacent Fabric DW
<b>702-502</b>	Roll (50m) HEAL'S Multifibre Adjacent Fabric DW
<b>702-420</b>	Pack (1m) Multifiber Adjacent Fabric Style 10
<b>706-799</b>	Test Kit (ISO 105 E04) – comprising artificial perspirant and glassware – sufficient for making approximately 200 litres of alkaline and acidic test solutions
<b>706-801</b>	Test Kit (AATCC Test Method 15) – comprising artificial perspirant and glassware – sufficient for making 200 litres of acidic test solution
<b>766-200</b>	HEAL'S Grey Scale for assessing Change in Colour ISO 105 A02
<b>766-201</b>	HEAL'S Grey Scale for assessing Staining ISO 105 A03
<b>766-512</b>	AATCC Gray Scale for Colour Change
<b>766-513</b>	AATCC Gray Scale for Staining

### CONSUMABLES AND ACCESSORIES FOR PHENOLIC YELLOWING

<b>750-602</b>	ISO Weight
<b>716-813</b>	Pack (10) Glass Plates
<b>706-708</b>	Pack (150) Impregnated Test Papers
<b>706-720</b>	Pack (50) Impregnated Test Papers
<b>706-709</b>	Pack (25) Control Fabrics
<b>706-792</b>	Box (100 pieces) BHT-free Polythene Film
<b>766-201</b>	HEAL'S Grey Scale for assessing Staining ISO 105 A03

### AGENT

We reserve the right to alter the specification or modify the appearance without notice.



**JAMES H. HEAL**   
& CO. LTD. HALIFAX ENGLAND

**HEALINK**   
WORLDWIDE SUPPORT

Richmond Works, Halifax, West Yorkshire HX3 6EP, England.  
Tel: +44 (0) 1422 366355. Fax: +44 (0) 1422 352440.  
E-mail: [info@james-heal.co.uk](mailto:info@james-heal.co.uk) Internet: <http://www.james-heal.co.uk>