

## Technical Product Information

Thermochromic Function: Irreversible

Product Name: **SC630**

Last Revision: 20/12/2018

### Description:

**SC630 is a solvent based paint for professional use in scientific research and development showing a temperature related irreversible colour change. The temperature at which thermal paints change colour is related to the length of time exposed as well the actual temperature. A longer period of heating can initiate the same colour change that would occur after a short exposure at a higher temperature.**

**The initial colour is red and after 10 minutes heating at 630°C it will change to grey / white.**

**The red colour has been seen as unchanged after 150 hours at 300°C in laboratory tests.**

### Technical Details

<b>Pigments</b>	<b>Thermochromic with irreversible colour change</b>
<b>Binders</b>	<b>Acrylic &amp; Silicon</b>
<b>Solids by weight</b>	<b>53%</b>
<b>VOC</b>	<b>636 g/l</b>
<b>Solvent</b>	<b>PMA, Xylene</b>
<b>Flash Point</b>	<b>30°C (Pensky Martin closed cup)</b>
<b>Drying method</b>	<b>Solvent evaporation. Touch dry typically 20-30 minutes depending on ventilation / coating thickness.</b>
<b>Coverage</b>	<b>Giving 30u dry film allow 13-15 sqm per litre of paint</b>
<b>Application.</b>	

**Paint may settle on storage and should be thoroughly stirred before use. Viscosity can be reduced by adding PMA solvent (CAS 108-65-6).**

**Before use the test surface should be thoroughly cleaned by removing all traces of grease, oil and loose material. Application direct to the metal surface is preferred method. If any kind of primer has previously been applied this should be carefully evaluated to ensure it is not affected by the thermal paint and in turn does not affect the colour change properties and adhesion of the thermal paint when heated. Zinc based primers have been used with thermal paint but compatibility should always be tested.**

Information in this Product Data Sheet is compiled from our general experience and data obtained from various technical publications. Whilst we believe that the information provided herein is accurate at the date hereof, no responsibility for its completeness or accuracy can be assumed. Tests are carried out under controlled laboratory conditions. Information is given in good faith, but without commitment as conditions vary in every case. The information is provided solely for consideration, investigation and verification by the user. We do not except any liability for any loss, damage or injury resulting from its use (except as required by law). Please refer to the Material Safety Data Sheet before using products to ensure safe handling.

A single coat of paint should be applied to give an opaque covering. Typically a 30u coat will be suitable. The coating should be completely dry before heating – allow 24 hours.

When held at 630°C for 10 minutes a colour change to grey / white is seen. Initially the colour is quite grey but the higher the temperature the whiter the new colour becomes.

Initial



630°C



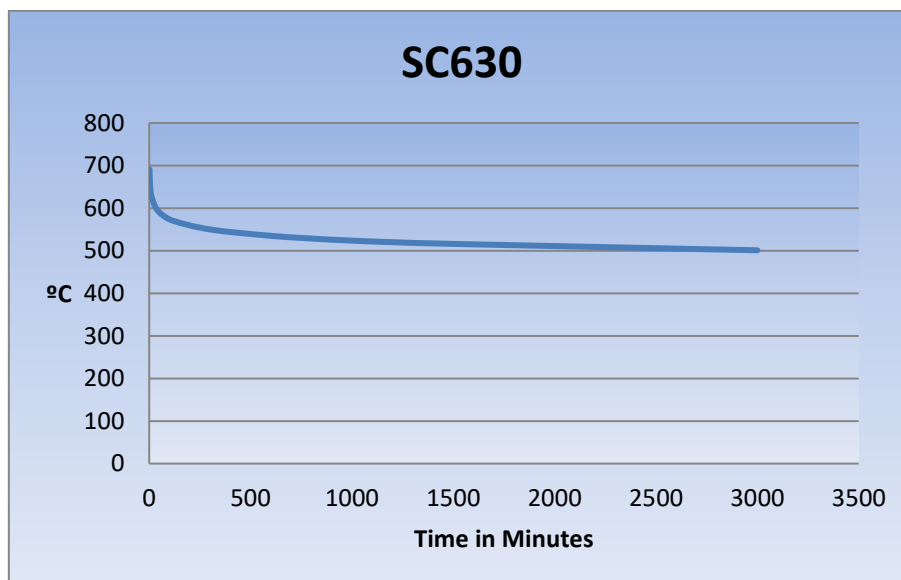
The relationship between time and temperature measured on a butterfly test rig gave the following results. Different calibration procedures may give different temperatures but the time / temperature / colour change relationship will be the same.

Time (minutes)  
10

Temperature  
630 °C



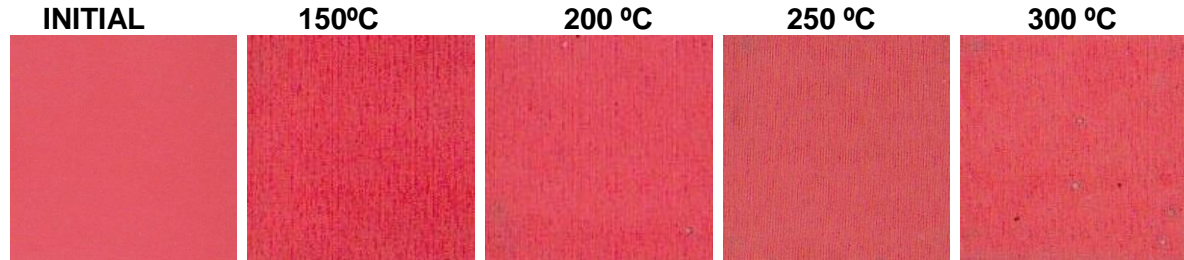
Time in Minutes	1.5	5	10	30	60	120	300	600	900	1200	1500	3000
SC630	691	648	630	603	586	570	550	535	526	520	516	501



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## LONG TERM EXPOSURE TO 150 HOURS AT STATED TEMPERATURES

### SC630



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