

Technical Product Information

Thermochromic Function: Irreversible

Product Name: **SC550**

Last Revision: 20/12/2018

This paint is only sold for use for scientific research and development. It is based on CI Pigment Red 105 which is toxic. Refer to the SDS before use. CI Red 105 is on the SVHC list.

Description:

SC550 is a solvent based paint 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 orange and full colour change to yellow at 550°C (temperature related to 10 minutes heating).

Technical Details

Pigments	Thermochromic
Binders	Acrylic and silicon
Solids	83.6% (VOC 386 g/l)
Solvent	PMA, Xylene
Flash Point	33°C (Pensky Martin closed cup)
Drying method	Solvent evaporation. Touch dry typically 20-30 minutes depending on ventilation / coating thickness.
Coverage	Giving 30u dry film allow 20-25 sqm per litre of paint

Application.

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.

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.

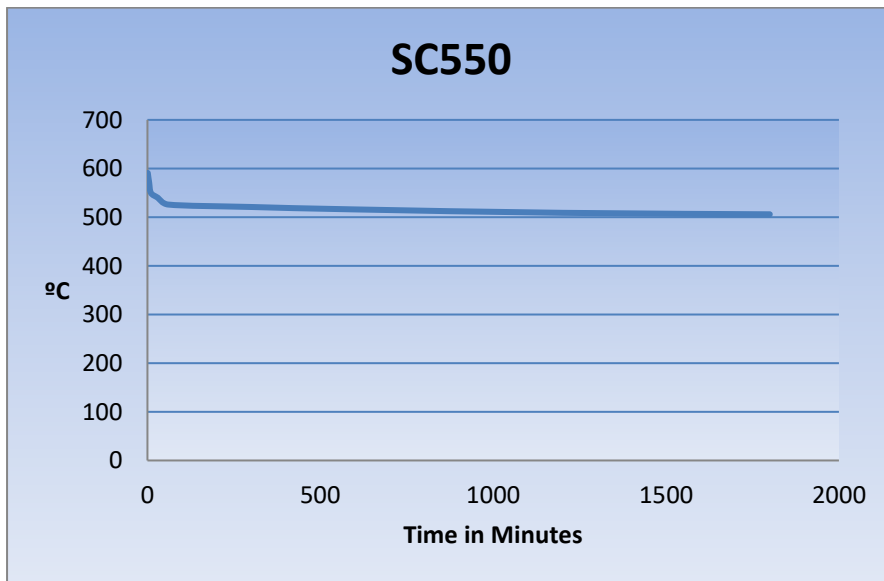
Colour Change.



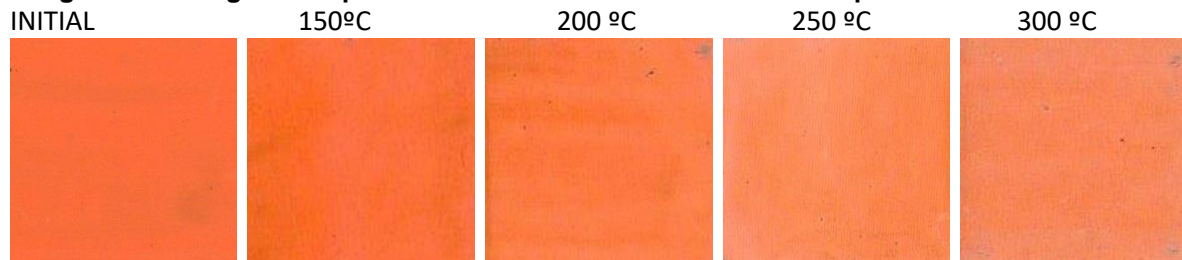
The relationship between time and temperature measured on a butterfly test rig gave the following results. Different calibration procedures may give different temperatures but the time / temperature / colour change relationship will be the same.

Colour Change to Yellow

Time in Minutes	1	5	10	30	60	300	600	1200	1800
Temperature °C	591	571	550	540	526	521	516	509	506



Long term heating tests – paint held for 150 hours at indicated temperatures.



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.