



**B&H Colour Change**

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## **THERMOCHROMIC MASTERBATCH PELLET FORM**

### **DESCRIPTION**

**Thermochromic Masterbatch** comprises of thermochromic microcapsules blended with a PS masterbatch carrier and come in pellet form. They have been specially designed to be compatible with most PS plastic systems. B&H Thermochromic Masterbatch is coloured below a specific temperature and changes to colourless or to another lighter colour as it is heated through its temperature range. These pigments are available in various colours and activation temperatures and have been used in many diverse applications such as baby feeding spoons, bottles, cups, childrens toys and drinking straws.

The activation temperature is defined as the temperature above which the pigment has almost achieved its final clear or light colour end point. The colour starts to fade at approximately 4° C below the activation temperature and will be in between colours within the activation temperature range. The colour change is "reversible," i.e., the original colour will be restored upon cooling.

### **SPECIAL CARE / STORAGE & HANDLING INSTRUCTIONS**

Thermochromic Masterbatch is more sensitive to the influences of UV light, Shear and temperature than many other types of pigment (see sensitivity). It should be noted that there are differences in performance of the various colours so that each should be thoroughly tested before commercial application.

Thermochromic Masterbatches have excellent stability when stored away from heat. Store below 25°C. A shelf life of 12 months is guaranteed provided that the material is stored in a cool and dark environment. Long term exposure to UV light or elevated temperature can cause loss of thermochromic function. Storage longer than twelve months is not recommended. Consult product MSDS prior to use.

### **TYPICAL PROPERTIES**

<b>Particle Size</b>	97% <6um
<b>Light Fastness (blue wool scale)</b>	1 – 2
<b>Shelf Life</b>	12 months
<b>Processing Temperature</b>	Should not exceed 230°C
<b>Pigment Concentration</b>	20%

<b>Solids</b>	99% +/-1%	212 St. Ann's Hill London SW18 2RU
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All raw materials used for production of Thermochromic Pigments are listed in: **EINECS, TSCA and DSL/NDSL**

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## **SENSITIVITY**

Thermochromic microcapsules are sensitive to adverse environmental conditions. These are listed below, along with a description of the nature of the sensitivity, and recommendations with regards to them.

**MIXING:** Thermochromic Masterbatch can withstand most standard mixing procedures for plastics applications. Care should be taken not to over heat whilst mixing (see HEAT below).

**LIGHT:** Long exposure to UV and some fluorescent lights can degrade colour intensity. Extreme exposure of more than several days of direct sunlight may degrade the colour of the microcapsules, though it will probably still change colour. More than 600 hours of a strong fluorescent light may also cause a loss of colour in the thermochromic.

**HEAT:** Extended exposure to high temperatures of 50°C or higher can degrade the pigment. With heat the exposure only has an effect if a given temperature is constantly maintained for a given amount of time. Thermochromic microcapsules can survive temperatures >200°C however they can only be exposed to these temperatures for a very short periods of time (whilst being moulded).

**CHEMICALS:** Thermochromic Masterbatch can be incorporated into many types of aqueous and UV curing formulations however thermochromic materials are sensitive to chemical exposure. Care must be taken to avoid the use of polar solvents such as alcohols, acetates etc. as these can damage the micro capsule walls.

**ALL APPLICATIONS USING COLOUR-CHANGING PIGMENTS AND INK OF ANY KIND SHOULD BE THOROUGHLY TESTED PRIOR TO APPROVAL FOR PRODUCTION.**

For further information or assistance, please contact B&H Colour Change Ltd on +44 (0) 845 458 4121

Information in this Product Data Sheet is compiled from our general experience and data obtained from various technical publications. While we believe that the information provided herein is accurate at the date hereof, no responsibility for its completeness or accuracy can be assumed. Tests at B&H Colour Change 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. B&H Colour Change 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.