

TECHNICAL PRODUCT INFORMATION

CHAMELEON® PHOTOCROMIC MASTERBATCH

Functionality: photochromic reversible plastic

Revision: 02

Last Revision: 22/09/2011

CHAMELEON Photochromic Masterbatch consists of Photochromic microcapsules blended with an EVA masterbatch base and come in pellet form. This material has been designed to be compatible with most PP and PE plastic systems. CHAMELEON® photochromic masterbatch are coloured when irradiated with UV light (natural light or UV lamp).

CHAMELEON Photochromic Masterbatch is available in several colours:

Standard colours	Blue, purple, yellow
Non standard colour	Red, Orange and other colour on request

The activation of the photochromic effect is triggered by exposition to the sun. CHAMELEON Photochromic Masterbatch becomes intensely colored after only 15 seconds of direct sun light exposure and return to clear after approximately 5 minutes out of any source of UV light. The color change is "reversible". The different colours fade to clear at different rates. Orange and yellow are the slowest to return back to clear. Yellow even requires visible light to return back to clear. If an exposed molded article is put in a dark area, the yellow will not fade until it is left in normal room light (visible light) for a few minutes.

Special Care and Storage / Handling Instructions

CHAMELEON® Photochromic masterbatch is sensitive to Heat and UV light. Do not surpass 200-230 degrees C when processing the masterbatch as this will alter the photochromic effect as well as the overall properties of the masterbatch. The photochromic effect will be affected by the amount of UV light that it is subjected to.

Additives such as UV absorbers, antioxidants and HALS improves the durability of the effect. Please test thoroughly combination of additives before mass production as they also impact the colour intensity and colour change activation process.

It should be noted that there are differences in performance of the various colours so that each should be thoroughly tested before commercial application.

CHAMELEON® photochromic masterbatch 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 photochromic function. Storage longer than twelve months is not recommended. Consult product MSDS prior to use.

TECHNICAL DETAILS

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

All raw materials used for production of CHAMELEON® pigments are listed in: EINECS, TSCA and DSL/NDSL

SENSITIVITY

CHAMELEON® photochromic 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:

CHAMELEON® photochromic 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 will degrade photochromic effect. Extreme exposure of direct sunlight will degrade the colour change properties of the masterbatch,

HEAT:

Extended exposure to high temperatures of 200°C or higher can degrade the photochromic effect. Heat also alters the intensity of the photochromic colour change. The strongest will be obtained at the lowest temperatures.

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 **LCR Hallcrest**

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