



ChromaZone® FF Powder

Technical Data Sheet

Description

ChromaZone® free flowing Powders are colour changing microcapsules in the powder form, designed for use in non-aqueous binder systems and selected plastic applications.

ChromaZone® free flowing Powders can be formulated into non aqueous and UV flexographic, Screen, Offset as well as Epoxy Inks. For aqueous applications, we recommend ChromaZone® slurries.

When compounding ChromaZone® powders, we recommend loading the powder at 10-25 % into an EVA carrier.

Standard activation temperatures	15°C, 31°C and 47°C.
Special activation temperatures	Any temperature between -10°C to +69°C.
Standard colours	Black, Blue, Magenta, Green, Orange and Red
Customs colours	Yellow, Purple, Turquoise, pink, vermilion...

ChromaZone® powder turns colourless or to a light color when heated up to its activation temperature. On the heating cycle, the color starts to fade at approximately 4° C below the activation temperature and will gradually weaken until activation temperature is reached.

The color change is “reversible, i.e., the original color will be restored upon cooling below the start of fade temperature. ChromaZone® powders are available for activation temperatures included between -10°C and +69°C.

Special Care and Storage / Handling Instructions

ChromaZone® Powders are more sensitive to solvents, UV light, pH, shear stress and temperature than any other types of pigment (see sensitivity).

Long term exposure to UV light or elevated temperature will cause permanent loss of the thermochromic functionality

ChromaZone® free flowing powders have excellent stability when stored away from heat (Store below 25°C) and light. A shelf life of 2 years is guaranteed provided that the material is stored in a cool and dark environment and kept in the tightly sealed original container.

TECHNICAL DETAILS

Solids	98% +/-2%
Particle Size (measured on the slurry before drying process)	90% < 8µm
Light Fastness (blue wool scale)	1 – 2
Shelf Life	24 months

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

SENSITIVITY

ChromaZone® free flowing Powders are sensitive to adverse environmental conditions. These conditions are listed below.

MIXING:

ChromaZone® ff Powders can withstand most standard mixing procedures. We recommend the use of a triple-roll mill to get optimum dispersion of the ff powder into a binder system. The use of either ball or bead mills can permanently alter the properties of the microcapsules.

LIGHT:

Long exposure to strong fluorescent light can permanently degrade thermochromic properties. Exposure of more than several days to direct sunlight will permanently affect the Thermochromic properties of the ff powder.

HEAT:

Extended exposure to temperatures higher than 50°C will alter the Thermochromic properties. ChromaZone® thermochromic microcapsules can survive temperatures as high as 200°C, when exposed for a very short periods of time.

CHEMICALS:

ChromaZone® ff Powder can be incorporated into many types of non aqueous and UV curing formulations. Nevertheless, thermochromic materials are sensitive to chemicals exposure. Care must be taken to avoid the use of Ethanol and Ammonia. They can be replaced respectively by isopropanol and substituted ethanolamine. We recommend running full stability test when the formulation contains polar solvents such as alcohols, acetates, etc....

ALL APPLICATIONS USING COLOR-CHANGING PIGMENTS SHOULD BE THOROUGHLY TESTED PRIOR TO APPROVAL FOR PRODUCTION.

Storage longer than 2 years is not recommended. Please consult MSDS prior use. Please contact TMC Hallcrest at +44 1244 818348

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 TMC HALLCREST 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. TMC HALLCREST 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.