QCR Solutions Corp
Quality + Consistency + Reliability

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Technical Data Sheet

Photochromic Pigments
Reversible Sunlight (UV) Reactive Materials

Photochromic Pigments are photochromic microcapsules in a powder pigment form. They are specifically designed for use in non aqueous based ink systems although their use is not limited to this. They can be used to formulate non aqueous based Flexographic, UV, Screen, Offset, Epoxy, and Gravure ink formulations (for aqueous applications we would recommend using a photochromic slurry). Photochromic powders are colorless in their inactivated state and become colored when exposed to an ultraviolet light source. They will respond to natural sun light as well as artificial sources of 365nm "black light".

Colors include Blue (PMS 2995U), Magenta (PMS 2405U), Orange (PMS 1495U), Green (PMS 3268U), Purple (254U), Red (PMS 1797U) and Yellow (PMS 116U).

Technical Specifications

Solids:	98% +/- 2%
Particle Size:	<7 microns (97%)
Shelf Life:	12 months

Storage and Handling

Photochromic Pigments are more sensitive to the influences of solvents, pH, and shear than many other types of pigment. It should be noted that there are differences in performance of the various colors so that each should be thoroughly tested before commercial application.

Photochromic pigments have excellent stability when stored away from heat and light. Store below 25oC. Do not allow it to freeze, as this will damage the photochromic capsules. Long-term exposure to UV light will degrade the photochromic capsules ability to change color. A shelf life of 12 months is guaranteed provided that the material is stored in a cool and dark environment. Storage longer than 12 months is not recommended. Consult product MSDS prior to use.

Sensitivity

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

Photochromic pigments can withstand most standard mixing procedures. Some shear is necessary as the microcapsules agglomerate slightly when in powder form. To disperse the powder we recommend the use of a three-roll mill. If too much shear energy is used (e.g. bead mills) then the microcapsules can be crushed and the photochromic function destroyed.

Light

Photochromic pigments will degrade from UV exposure over Time. Exact life expectancies depend on the intensity and duration of the UV exposure. Some colors will degrade faster then others. Do not use UV inhibitors over the photochromic powders as it will interfere with the color change properties.

Heat

Some colors may degrade quicker over time when held at elevated temperatures.

Chemicals

Photochromic pigments can be incorporated into many types of no aqueous inks. However, photochromic 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 microcapsule walls.

All Applications using any QCR Solutions Corp products should be thoroughly tested prior to approval for production.

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 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.

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