

Technical Data Sheet

Thermochromic Textile Screen Inks (Plastisol Based) Reversible Temperature Reactive Material

Thermochromic Textile Screen Inks (Plastisol based) for textile substrates. The ink is supplied as ready to use one part ink system. It is easy to use allowing flexibility in application and optimization in appearance of printed article.

Colors and Activation Temperatures

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

Colors include Black, Blue, Magenta, Green, Orange, Red, Purple, Brown and Custom Matching is available.

Activation Temperatures can be set anywhere between 10°C through 69°C. It is defined as the temperature above which the pigment has almost (>95%) achieved its final clear or light color end point.

Application

The Thermochromic Textile Screen Inks are ideally suited for flat bed screen-printing processes onto textile substrates. As with all thermochromic inks, the printed effect is dependent upon several factors including press speed, mesh count, and etc.

Printing Recommendations

Process Printing

Use a 305 mesh screen and a 70 durometer squeegee.

Spot Color Printing

Print as you would any normal plastisol. Using a finer mesh screen (230-305) is recommended to reduce ink consumption. A heavier mesh screen (110-230) will result in brighter colors but slightly more background color.

Ink Consumption

A typical 12” x 12” (100% coverage) four-color image printed with 305 mesh, double pass all colors but yellow, requires 3-3.5 grams of ink per impression. A gallon of ink prints approximately 1,200 garments. A general rule for usage is 0.02278 grams per square inch of coverage (following the same printing parameters, 305 mesh, double pass all colors but yellow).

Dilution

The ink is ready to print out of the can. Thinners or other modifiers are not recommended because they are likely to hurt the life of the ink. Do not mix spot colors to form additional colors because the spot color inks do not have compatible stabilization systems and the life of the ink will be impaired.

Curing

Plastisol inks WILL NOT AIR DRY. They must be heat cured. In order to properly cure it is important that the entire ink deposit must reach 300oF (149oC). This can be accomplished with the use of a conveyor dryer, flash curing unit, or simple infrared heater. Fully cured inks can withstand repeated washings where as under cured inks are usually the cause of poor washability. It is also important that curing temperatures not be too high. Temperatures in excess of 330oF will begin to cause degradation to the ink pigments and shorten the life of the color change properties.

Mixing Instructions

It is recommended to mix with a high speed mixer before use (a drill and a mixing blade works fine). The green and aqua inks will thicken over time. Thorough mixing prior to use will thin the inks to normal viscosity. Do not mix with any other type of ink systems.

Cleaning Recommendations

Thermochromic plastisol inks should be cleaned like any standard plastisol with mineral spirits or other various screen washes. It is extremely important to have the screens, squeegees, and floodbars as clean as possible to prevent contamination of the inks.



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Storage and Handling

Thermochromic Textile Screen Inks have excellent stability when stored away from heat and light. A shelf life of excess of 12 months provided that the material is stored in a cool and dark environment. Keep containers tightly closed to prevent contamination of the inks during storage.

Sensitivity

Rub Resistance

No over varnish or laminate is necessary with thermochromic plastisol inks.

Light

Thermochromic plastisol inks will degrade from UV exposure over time. Exact life expectancies depend on intensity and duration of UV exposures. T-shirts printed with thermochromic plastisol ink will withstand a minimum of 20 typical wearings. UV protective varnish should not be used as this will interfere with the color changing properties of the ink.

Adhesion

Thermochromic plastisol ink produces best print quality on a high quality dense weave or ring-spun cloth. Due to the variations in substrate it is recommended that the ink is tested before any commercial use.

Chemicals

Garments printed with thermochromic Inks should be washed without using chlorine bleach. Chlorine bleach negatively affects the ink and will shorten the life of the color change.

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.