



Troysperse 98C for Dispersion & Stabilization of Carbon Black Pigments



Troysperse 98C is a pigment dispersing additive for non-aqueous systems. It provides proven performance with difficult-to-disperse pigments such as carbon black, phthalocyanines, transparent iron oxides and other organic & inorganic pigments.

Troysperse 98C is an amphoteric, long-chain dispersing additive with 95% activity. The high level of activity provides the necessary dispersion performance without burdening the formulator with high solvent concentration, or requiring the use of other dispersing additives or synergists.

The high level of activity also allows efficacy at low use levels, providing excellent cost-in-use.

Some Benefits of Troysperse 98C Include:

- Maximizing color development
- Reducing process time
- Allowing higher pigment loading
- Providing excellent dispersion stability
- Eliminating floating & flooding problems

TYPICAL USE LEVELS:	
Pigment Type	% Weight on Pigment Weight
Carbon Black	20 – 30
Organic Color Pigments	10 – 20
Transparent Iron Oxides	8 – 15
Iron Oxides	2 - 5
Titanium Dioxide	0.5 – 1

Incorporation

Troysperse 98C should be incorporated at the start of the pigment dispersion stage of manufacture for the maximum benefit.

Troysperse 98C is efficient in a wide range of resin systems and chemistries such as:

- High solid systems
- Air dry alkyds
- Industrial baking systems
- Acrylics
- Cellulose acetate butyrates
- Cellulose acetate propionates
- Chlorinated rubbers
- Hydrocarbons
- Nitrocellulose
- Oil, rosin, varnish
- Epoxies

Troysperse 98C is compatible with aromatic, aliphatic or oxygenated solvents.

TROY PERFORMANCE ADVANTAGE

Low Use Level - High Performance

Troysperse 98C and a high molecular weight (HMW) dispersant were compared in a medium oil alkyd pigment paste formulation using Degussa FW 200 Carbon Black pigment.

Pigment pastes formulated with Troysperse 98C show shorter grind time, and excellent color strength coupled with excellent dispersion stability.

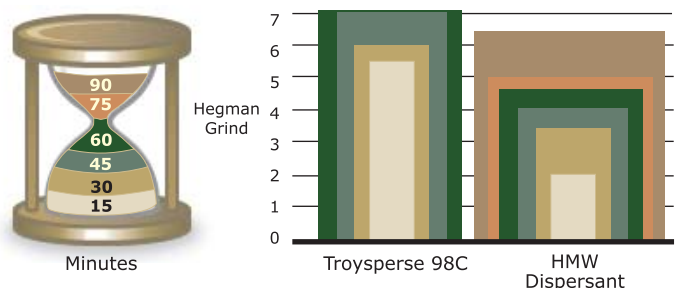
Optimized Pigment Paste Formulations

The work revealed an optimum use level of 30% of total pigment weight for Troysperse 98C and 70% of total pigment weight for the HMW Dispersant. The optimized pigment paste formulations are:

INGREDIENTS	% by total weight	
	Troysperse 98C	HMW
Medium Oil Alkyd (15% solids)	84.4	79.6
Degussa FW200	12.0	12.0
Troysperse 98C	3.6	-
HMW Dispersant	-	8.4
TOTAL	100.0	100.0

Hegman Grind vs Time

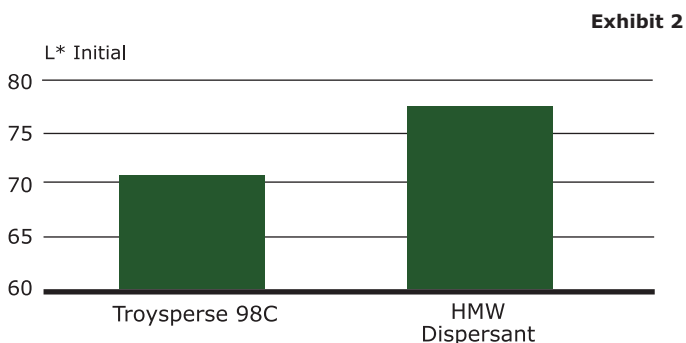
The pigment pastes were produced using a Dispermat media mill with pearl head attachment. The goal was to get the highest Hegman Grind (smallest particle size pigment) in the shortest time possible. Exhibit 1 illustrates how Troysperse 98C showed a significant advantage in improving the grind time of the carbon black pigment.



Color Strength after Tinting (Initial)

A typical long oil alkyd glossy white base coating was tinted with 1% pigment paste and drawdown charts were prepared with a 3 mil (75 micron) Bird Film Applicator for comparison. Color development was measured using a Datacolor Mercury Colorimeter with the CIELAB scale. L* values reported.

L* values represent the lightness (100) and darkness (0) scale of the paint film. Lower L* values indicate a darker color which can be referred to as deeper black tones.

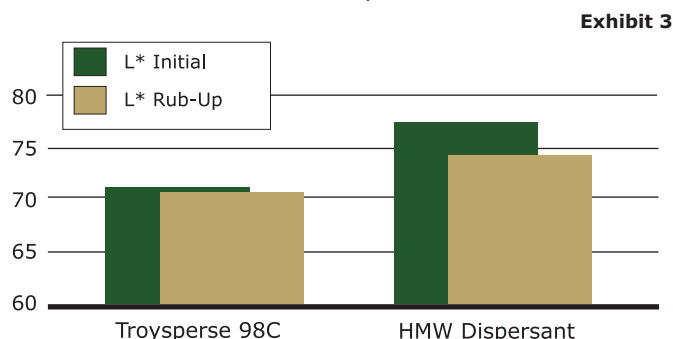


As Exhibit 2 illustrates, Troysperse 98C provided significantly improved color strength at relatively lower use levels when compared to HMW Dispersant.

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Color Stability after Rub-up (Initial)

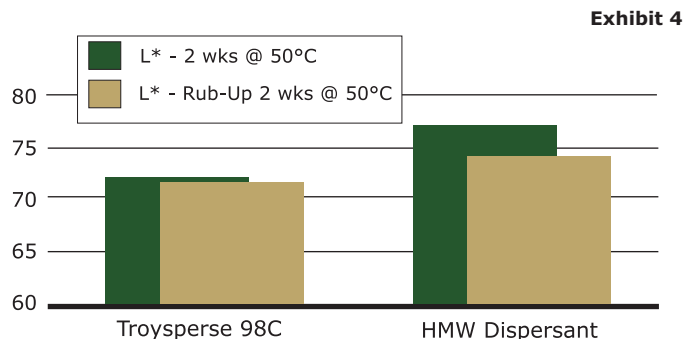
To compare the initial stability of the pigment dispersions, rub-up tests were performed on the drawdown charts. 30 seconds after the application, the film was rubbed in a circular motion 50 times with the index finger. Color differences between rubbed-up area (where additional shear has been applied) and non-rubbed film were measured using a Datacolor Mercury Colorimeter with the CIELAB scale. L* values reported.



As Exhibit 3 illustrates, 98C imparted improved stability when compared to the HMW Dispersant samples.

Color Stability after Rub-up (Aged, 2 wks @ 50°C)

Color stability tests were conducted by aging the pigment paste samples in an oven for 2 wks @ 50°C. Pigment paste samples were then used for tinting the typical long oil alkyd glossy white base coating and drawdown charts were prepared for comparison.



As Exhibit 4 illustrates, Troysperse 98C provided excellent stability whereas the HMW Dispersant sample showed significant rub-up after the color stability test.