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## DATA SHEET

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### TALLICIN® 1555

A BLOCK CO-POLYMER WITH PIGMENT AFFINIC GROUPS

#### TYPICAL CHARACTERISTICS

Appearance	Yellowish Brown Liquid
Non-Volatile, Percent by Weight	55%± 1
Color	8 Gardner, Max
Viscosity	T-X (Gardner-Holt)
Solvent	1-methoxy-2-propanol (PMA Acetate)
Weight per Gallon, Lbs	8.35± .1

#### PROPERTIES

Tallicin® 1555 is compatible with a broad spectrum of resins when used as a grinding resin for pigment dispersions for tinting and coloring of masstones. The product is compatible with many different kinds of solvents that vary greatly in their polarity, including ethanol, methyl amyl ketone and odorless mineral spirits. Tallicin® 1555 is aromatic-free for compliance with certain air pollution control regulations.

#### APPLICATIONS

Tallicin® 1555 is a block co-polymer designed as a grinding vehicle for high-quality pigment dispersions having broad compatibility with binders commonly used in coatings and inks. Tallicin® 1555 can produce stable dispersions with high pigment loadings, low viscosities and controlled flocculation. Tallicin® 1555 has been evaluated with a wide variety of commercial wetting agents and generally requires a lower amount than competitive grinding resins. For example, when properly formulated with Tallicin® 3405, Tallicin® 1555 can eliminate the need for anti-settling additives in the dispersion formula.

Using combinations of solvents when formulating dispersions with Tallicin® 1555 may increase the overall performance and color strength of the dispersion. Three solvents that should be evaluated if acceptable for the particular system are Butyl Acetate, Aromatic 100 and Odorless Mineral Spirits.

Dispersion equipment has a major effect on performance of pigment dispersions, especially with organic pigments. To obtain optimum performance, Tallicin® 1555 should be first combined with the solvent and the wetting agent in a premix tank equipped with a Cowles Blade. The pigment should next be slowly added and mixed at low-to-medium rpm for at least 30 minutes. The premix is then ready to be milled through a horizontal mill using, preferably, small media with high density.

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The effectiveness and performance of Tallicin® 1555 compared with Byk 106 was evaluated in a standard alkyd-based dispersion formulation:

<b>TRANSPARENT YELLOW IRON OXIDE DISPERSION FORMULATIONS</b>		
<b>INGREDIENT</b>	<b>STANDARD FORMULA</b>	<b>IMPROVED FORMULA</b>
Yellow Transparent Oxide	33.0	33.0
Long Oil Alkyd	32.3	32.3
Rule 66 Mineral Spirits	27.7	27.7
Byk 106	7.0	--
Tallicin® 1555	--	7.0
Totals	100.0	100.0

The above ingredients were combined and mixed under high-speed for 30 minutes. The pre-mix was then ground in a ball mill containing 1/4 -inch steel balls for 72 hours.

The Standard Formula developed pressure inside the mill during the grinding process. The Standard Formula was prepared again and the milling process was repeated from the start with similar results of increased pressure.

Both dispersion formulas were evaluated at 3% by weight in a white alkyd tint base, and at 5% in a clear alkyd base, and at 5% in a clear commercial exterior wood stain with results as follows after two weeks stability testing:

<b>SUMMARY OF RESULTS</b> TALLICIN® 1555 vs. BYK106 IN TRANSPARENT YELLOW IRON OXIDE DISPERSION FORMULATIONS		
	<b>STANDARD FORMULA</b>	<b>IMPROVED FORMULA</b>
<b>WHITE ALKYD TINT BASE</b>	Standard Color Strength	+3.7% Strong
<b>CLEAR ALKYD BASE</b>	Relatively Hazy	Superior Transparency
<b>CLEAR COMMERCIAL EXTERIOR WOOD STAIN</b>	Weaker Color on Wood with Less Wood Grain Appearance	Stronger Color on Wood with Excellent Wood Grain Appearance

The Standard Formula had a viscosity of 400 cps and the Improved Formula had a viscosity of 680 cps.

In summary, Tallicin® 1555 provides superior efficiency in milling and particle size reduction, excellent appearance on wood, and outstanding transparency in a clear base, compared with the use of equal parts of Byk 106 in a standard long-oil alkyd dispersion of transparent yellow iron oxide.

**KEY PROPERTIES**

Excellent wetting properties.  
Excellent stabilizing properties.  
Compatibility with many binders.  
High pigment loadings with low viscosity.  
Excellent durability.

**CONTAINER SIZES**

5 Gallon Pails and 55 Gallon Drums.

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1/20/09