

TICO®































PIGMENT PREPARATIONS

High Performance Titanium Color Pigments

Your lead- and cadmium-free alternative

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TICO® Color shades and technical data

Products	Full Shade	Reduction 1:3 TiO ₂	Physical Data			Fastness Properties					
			Density [g/cm ³]	Oil Absorption [g/100g]	Specific Surface [m ² /g]	Acid ¹⁾	Alkali ¹⁾	Over-painting ²⁾	Heat Resistance ³⁾ [°C]	Light Fastness ⁴⁾	Weather Fastness ⁵⁾
TICO® Y 588			3.3	15	5.3	5	5	5	200	8	5
TICO® Y 590			2.8	23	8.4	5	5	5	250	8	5
TICO® Y 591			2.5	24	5.3	5	3-4	5	250	8	5
TICO® Y 594			2.5	22	6.8	5	3-4	5	200	8	5
TICO® Y 597			2.4	21	7.1	5	3-4	5	200	8	5
TICO® Y 622			2.7	22	6.0	5	5	5	200	8	5
TICO® Y 623			2.8	26	4.9	5	5	5	220	8	5
TICO® Y 630			3.0	16	5.1	5	5	5	250	8	5
TICO® O 635			2.9	19	11.8	5	5	5	250	8	5
TICO® O 640			2.5	26	5.9	5	5	5	200	8	5
TICO® R 642			2.9	19	7.5	5	5	5	200	8	5
TICO® R 644			2.5	26	8.2	5	5	5	250	8	5
TICO® R 645			2.9	15	5.8	5	5	5	250	8	5
TICO® R 655			2.7	15	7.5	5	5	5	200	8	5

¹⁾ Pigments were dipped into hydrochloric acid or sodium carbonate solutions of varying concentrations. Rating: 1 = poor, 5 = excellent

²⁾ [AM (160°C/30 min)] - Assessment of bleeding of a white NC-topcoat using the Grey Scale according to DIN 54002. Rating: 1 = severe, 5 = none

³⁾ Pigments were tested in an alkyd/melamine system with 30 minutes baking time. Temperature range 160°C to 250°C.

⁴⁾ Light Fastness [Full shade] was tested in an alkyd/melamine system. Assessment with Blue Wool Scale according to DIN 54003. Rating: 1 = very poor, 8 = outstanding

⁵⁾ Weathering Fastness [Full shade] was tested in a waterborne acrylic resin system. Assessment with Grey Scale acc. to DIN 54001 after 2000h Arc Xenotest acc. to DIN EN ISO 11341-1-A. Rating: 1 = poor, 5 = very good.

Products	General industrial	Automotive	Powder	Coil
TICO® Y 588	■	■		
TICO® Y 590	■	■	■	■
TICO® Y 591	■	■	■	
TICO® Y 594	■	■		
TICO® Y 597	■	■		
TICO® Y 622	■	■		
TICO® Y 623	■	■	■	
TICO® Y 630	■	■	■	■
TICO® O 635	■	■	■	■
TICO® O 640	■	■		
TICO® R 642	■	■		
TICO® R 644	■	■	■	
TICO® R 645	■	■	■	■
TICO® R 655	■	■	■	■

■ Our recommendation



Sunflower Yellow

TICO® Y 594	0.3 parts
HEUCODUR® Yellow 6R	8.9 parts
HEUCODUR® Plus Yellow 150	90.8 parts



Signal Yellow

TICO® Y 594	66.2 parts
TICO® Y 622	15.1 parts
HEUCODUR® Yellow 255	14.9 parts
Iron Oxide Yellow	3.8 parts



Brilliant Orange

TICO® O 640	54.6 parts
TICO® Y 594	45.0 parts
TICO® R 655	0.4 parts



Pure Orange

TICO® O 640	86.7 parts
HEUCODUR® Yellow G 9180	13.3 parts



Tornado Red

TICO® R 655	85.7 parts
P.V. 19	14.3 parts



Salsa Red

TICO® R 655	66.7 parts
P.V. 19	33.3 parts



The idea behind TICO®

TICO®s are a new class of high performance yellow, orange and red pigment preparations. These titanium based colorants exhibit maximum gloss, opacity, strength and durability, which cannot be achieved with today's well established blends between organic High Performance Pigments and white or yellow titanium or bismuth vanadate pigments.

TICO® stands for Titanium Color made by a proprietary co-finishing process to attach the organic colorants to the surface of titanium carrier pigments. As a result TICO®s develop full color saturation and high gloss, low dusting properties and are easy to disperse.

Improved fastness properties

In TICO®s the valuable organic pigments are protected by the specialty designed titanium carrier pigments, which leads to outstanding light and weather fastness. As opposed to titanium dioxide, which has been known to exhibit photocatalytic activity accounting for weather induced degradation mechanisms, the new titanium carrier pigments of TICO® act like UV-absorbers and protect the sensitive organic pigment from UV-attacks.

Outstanding processing characteristics

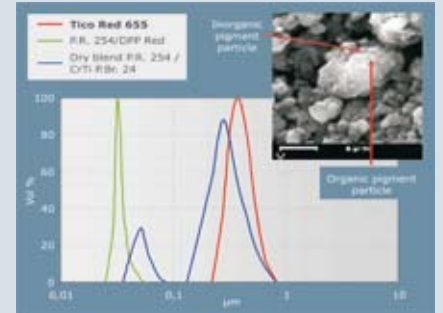
High performance organic colorants and inorganic pigments differ significantly with respect to their surface characteristics and their specific weights.

The new technology resolves this problem by preparing a pre-dispersed form of the two pigments, which allows significantly shorter grinding times comparable to those for pure inorganic pigments and less risk for overgrinding and color shift.

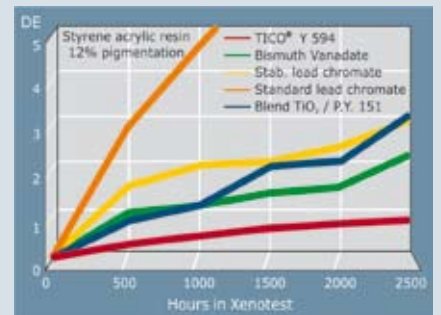
- The new technology offers two further advantages compared to straight blends:
- › the oil absorption can be greatly decreased, allowing for higher pigment loadings in colorant pastes
 - › the tendency for dusting is significantly reduced.

Value-in-use

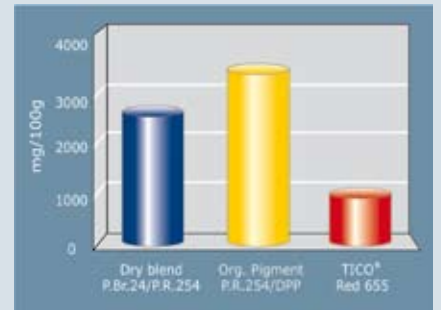
Formulation costs with TICO®s are lower if compared to alternative high performance color solutions. TICO®s are highly opaque and sufficiently saturated to cover important full shade industry colors like e.g. defined in the RAL register, but also branded shades.



Monomodal particle size distribution of TICO® Red 655



Accelerated weathering results in accordance with DIN EN ISO 11341-1-A



Dusting according to DIN 55992-1



Flame Red RAL 3000

	Lead	TICO®	Vanadate	Organic
Molybdate Red	75.9%			
Pigment Red 52:2	8.2%			
Pigment Orange 36				51.9%
Pigment Red 254			44.6%	
Pigment Red 178				15.7%
Bismuth Vanadate			29.4%	
TICO® Red 655		50.2%		
HEUCODUR® 6R		39.7%		
Iron Oxide Red	4.5%	10.1%	17.4%	7.1%
Titanium Dioxide	11.4%		8.6%	25.3%
Cost ratio	1	4	10	7

Formulations are adjusted in opacity

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Our product specific and application information are based upon our current knowledge. They are non-binding and cannot be taken as a guarantee. The processing company must establish the suitability of individual products itself. As their use lies beyond our knowledge and control, we cannot accept any liability relating to the use of our products in particular applications. In addition to that, the legal rights of third parties must always be considered. The specification agreed between the customer and ourselves is the basis upon which our general sales and delivery conditions are set and is the deciding factor concerning any liabilities. Our standard specification is then valid if no specification has been agreed upon between the customer and ourselves.

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