Local Insight, Global Impact

TIPAQUE® PFC105

Super Durable Rutile TiO_2 for Long-Life Coatings

TIPAQUE® PFC105 is a large particle size, rutile-type titanium dioxide pigment produced by the chloride. ISK's proprietary surface-treatment technology forms a thick and uniform layer around the titanium dioxide core, effectively suppressing photocatalytic activity that can accelerate resin degradation.

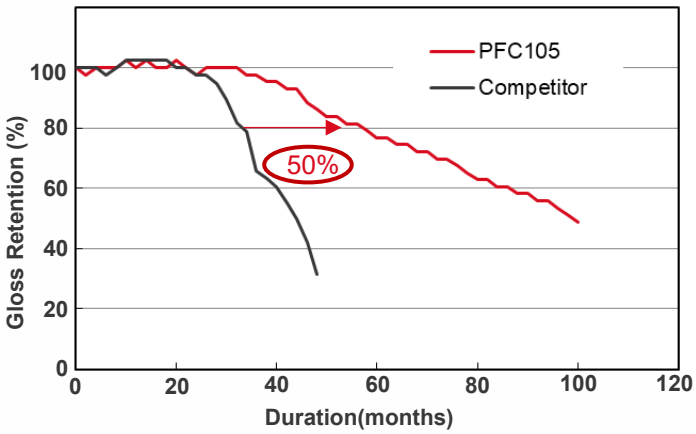
Key Benefits of PFC105

- Enhanced weather resistance
- Extended coating service life
- Superior color stability
- Improved long-term coating durability

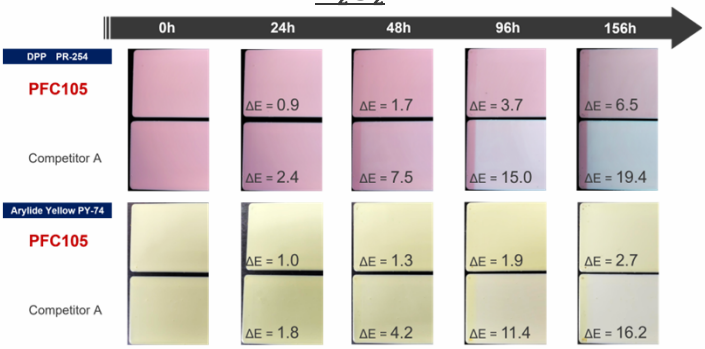
Recommended Applications

- Architectural exterior coatings
- Industrial & protective coatings
- Powder coatings

Durability comparison of TiO2 in PVDF paint system in Florida

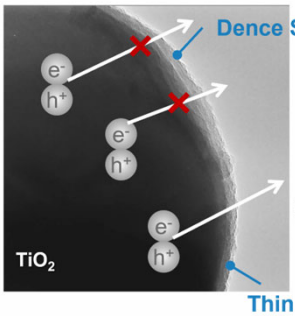


Implication for color durability in Organic Colorant system in PVDF paint system at XWM with H_2O_2



Conceptual illustration of TiO2 surface reactions in coating film

Conventional TiO_2

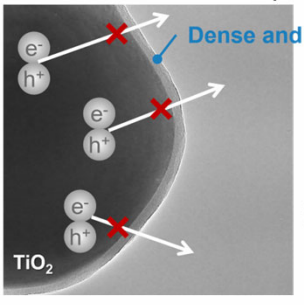


・O_2H radical = Photocatalytic activity

➢ causes resin degradation!!

・Unwanted reactions within the coating film
・Accelerated degradation of organic components

PFC105 - Super Durable TiO_2



No Photocatalytic activity triggered

➢ Degradation caused by TiO_2 prevented

・Surface reactions minimized
・Stable environment within the coating film

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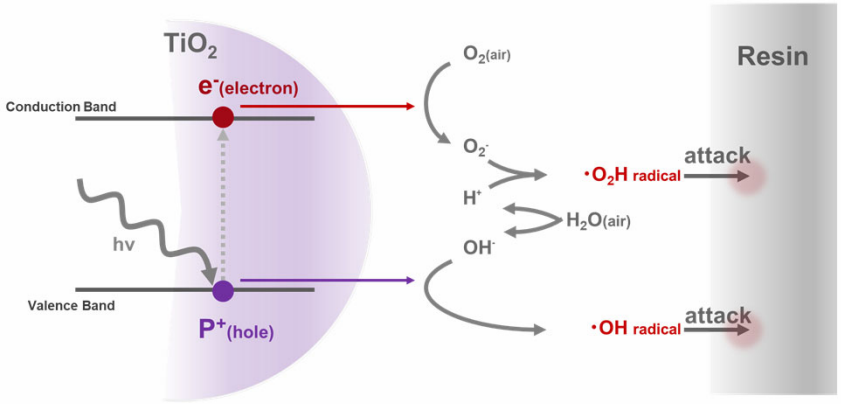
Typical Physical Properties(for formulation reference)

Item	Value
Particle size μm	0.28
TiO_2 (%)	87
Oil absorption g/100g	22
Post-treatment	Si, Al, Zr, Polyol

Sample	Color			Gloss	
	L	a	b	20°	60°
PFC105	96.1	-0.7	1.1	53	82
Competitor A	96.0	-0.7	1.4	51	81
Competitor B	96.2	-0.6	1.2	44	76

Weatherability is no longer determined by resin performance alone.

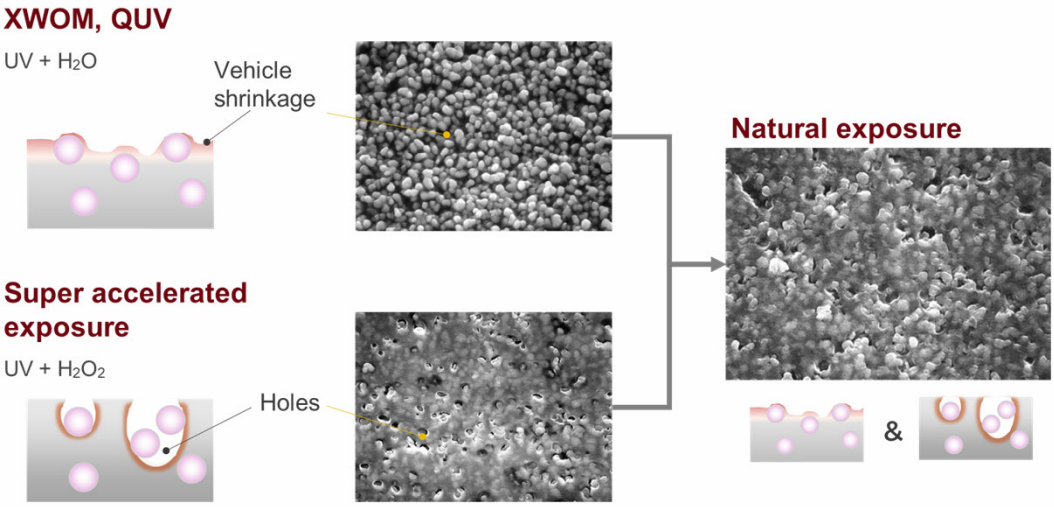
In natural environment, coating film deterioration occurs due to both Vehicle shrinkage and TiO_2 Photocatalytic effects.



Resin Deterioration Image by TiO2 photocatalytic activity

Are you using the correct evaluation method to test TiO_2 's effect on coatings?

ISK offers evaluation of customer samples using its Super Accelerated Exposure Test, developed by Toyota. This proprietary method is uniquely designed to assess the photocatalytic activity of TiO_2. The test employs Xenon light irradiation combined with hydrogen peroxide (H_2O_2) spraying to accelerate photocatalytic activity, enabling accurate evaluation of TiO_2 performance in coating systems.



TIPAQUE®PFC105 is designed as a functional component for durability-oriented coating systems.

For further information, please contact us via https://www.ishihara.com/

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