



Ti-Pure™
Titanium Dioxide

Application Guide for Plastic End Uses

Finished Product	Grade					
	R-101	R-103	R-104	R-105*	R-350	R-960*
Polyethylene/Polypropylene						
Injection Molding	●	●	●		◆	
Blow Molding	●	●	●		◆	
Blown Film	●	●	●		◆	
Extruded Sheet	●	●	●		◆	
High-Temperature Cast Film or Extrusion Coating	◆		◆		◆	
Exterior, Durable*				◆		●
Liquid Colorants		◆				
PVC						
Interior, Rigid	●	●	●			
Exterior, Chalking	●	●	●			
Exterior, Nonchalking				◆		◆
Flexible, Durable*	●	◆		◆		
Plastisol		●		●		●
Lead-Stabilized Systems		●		◆		●
Pipe**	●	●				
ABS	●	●	●	●	◆	●
Polystyrene	●	◆	◆		●	●
Polycarbonate	●	●	◆	●		
Polyamide	●	◆	●	●		●
Polyester		●	◆	●		
Thermoset (PES)	●	●	●			●

◆ Preferred grade for application

● Grade fully usable for application

*Grades R-105 and R-960 are maximum durability grades and recommended for all applications that require extended outdoor service life.

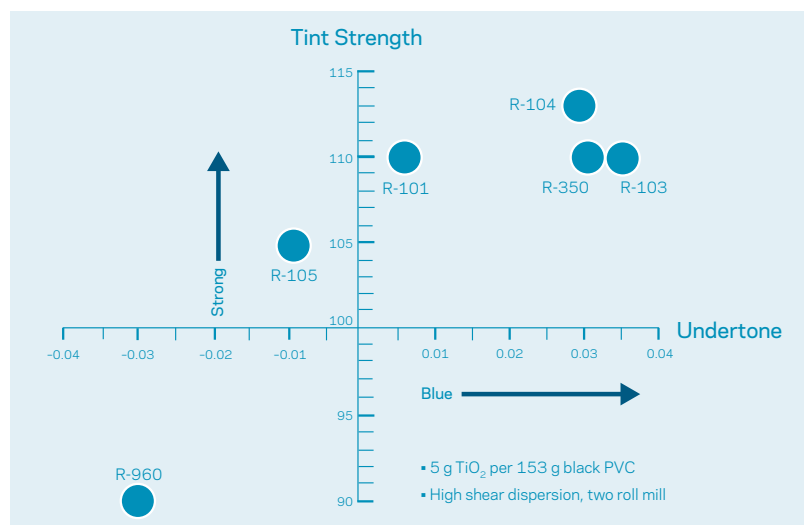
**Grades R101, R103, R105, R902+, R706 and R900, are listed with the NSF International for plastic pipe use.

Plastics Grades TiO₂ Physical Properties

Property	Grade					
	R-101	R-103	R-104	R-105	R-350	R-960
TiO ₂ , wt%, min.	97	96	97	92	95	89
Alumina, wt%, max.	1.7	3.2	1.7	3.3	1.7	4.0
Silica, wt%, max.	N/A	N/A	N/A	3.5	3.0	6.5
Organic Treatment	hydrophilic	hydrophilic	hydrophobic	hydrophobic	hydrophobic	N/A
Color CIE L*, min.	97.9	97.8	97.5	98.5	98.5	98.5
Specific Gravity	4.2	4.1	4.2	4.0	4.1	3.9
Median Particle Size, μm	0.29	0.22	0.22	0.31	0.22	0.35
Vinyl Tint Strength	110	110	113	104	110	90
Vinyl Undertone	0.005	0.035	0.030	-0.010	0.030	-0.030
pH	8.5	6.5	N/A	N/A	N/A	7.4
Resistance, min.	2.0	4.0	N/A	N/A	N/A	4.0

Notes: Unless noted, values are typical. Resistance is reported as the minimum value in k ohm-cm. Test methods used to determine the values reported are available from your TiO₂ sales or technical service representative.

Figure 1. Titanium Dioxide Plastics Optical Properties



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