

Characteristics

C. I.	Solvent Red 111
C. I. No.	60505
CAS No.	82-38-2
Chemical class	Anthraquinone

Illustrations

			
0,01 %	0,05 %	0,10 %	0,10 % + TiO ₂

Properties

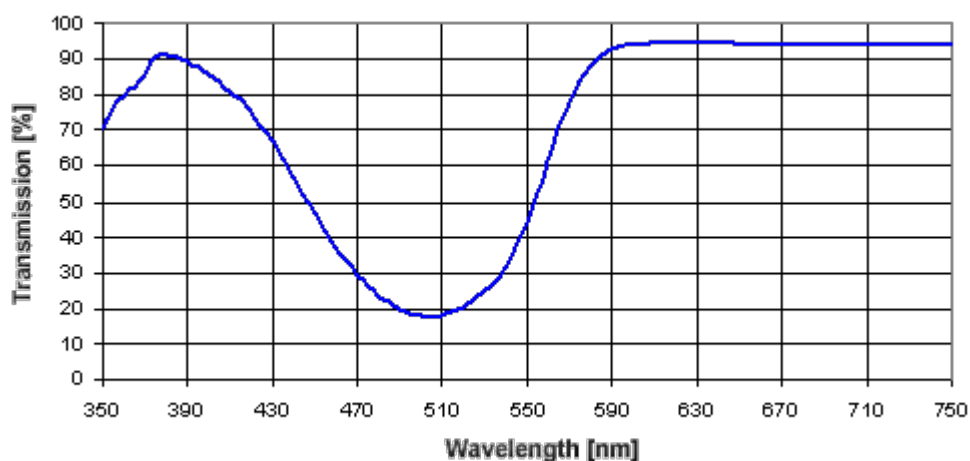
Specific Weight [g/cm ³]	1,35
Bulking Volume [l/kg]	11
Melting Point [°C]	170
Concentration for 1/3 of Standard Depth in PS [%]	0,251

Fastness to Chemicals

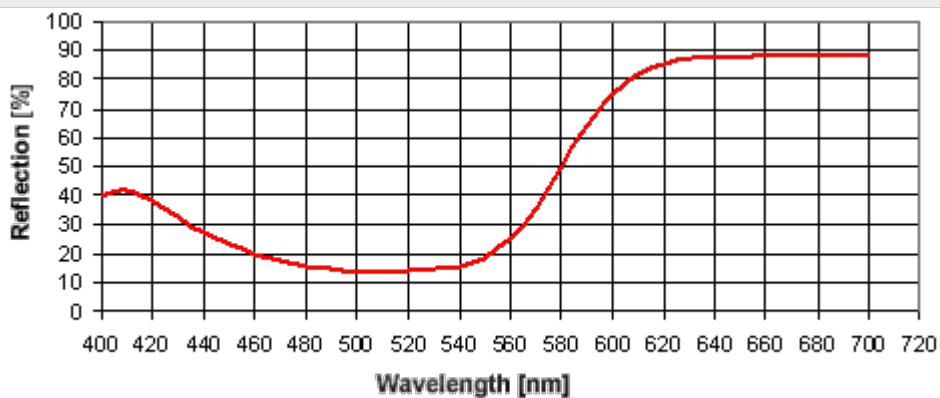
	<i>Resistance to radical forming agents</i>
Dibenzoyl-peroxide	+
Methyl-ethyl-keton-peroxide	+
Dilauroyl-peroxide	+
	<i>Fastness to bleeding in PS</i>
Distilled Water	5
5 % Acetic Acid	5
15 % ethanol	5
Cooking oil	5
50 % ethanol	5
n-heptan	5
3 % Solution Na ₂ CO ₃ in Water	5
Solution 2 % NaCl and 2 % Wine Acid	5
	<i>Other Fastness</i>
Light - full shade - 0,05 %	7
Light - 0,05% + 1% TiO ₂	6
Heat Resistance [°C]	300
Migration	5

Curves

Transmission Curve



Remission Curve



Application Possibilities

Polystyrene	☒
ABS	☒
Polycarbonate	☒
PA 6	☐
PA 6,6	☐
Polyethylenterephthalate	☐
● suitable	☐ partially suitable

Testing methods

- **Specific weight** - Was determined by automatic gas pycnometer in g/cm³
- **Bulking volume** - Denotes the volume of 1 kg loosely poured dye, expressed in litres
- **Melting point [°C]** - Was determined by DSC method (Differential Scanning Calorimeter)
- **Concentration for 1/3 of standard depth** - Concentration of the dye in % for coloring of polystyrene containing 1% TiO₂ to get 1/3 of standard depth
- **Transmission curve** - Graphic image of dependence of transmission on wave length measured on chips made of polystyrene Krasten 127 with the thickness of 2 mm and content of dyestuff of 0,01 %
- **Reflection curve** - Graphic image of dependence of reflection on wave length measured on chips made of polystyrene Krasten 127 with the content of dyestuff of 0,01 % and 1 % TiO₂.
- **Fastness to bleeding** - Testing was done according to Resolution AP(89) 1 (Council of Europe Committee of Ministers) for using of colourants in plastic materials coming into contact with food. Chips made of polystyrene Krasten 127 with content of 0,1 % of dyestuffs was in contact with food-simulating liquids for 5 hours at 50 °C. Bleeding (staining of liquids) was assessed using 5 degree International Grey Scale ISO 105 A2 where 5 indicates no bleeding
- **Resistance to radical-forming agents** - Polyester resin Aropol FS-9945 with content of 0,05 % dyestuff was cured 30 minutes at 80 °C using addition of 2 % hardening agent. The change of color shade after curing was assessed in comparison with the colour of the solution of dyestuffs in the resin before curing.
+ the dye is suitable (without colour change)
- the dye is not suitable (heavy colour change)
- **Light fastness** - Xenotest - ČSN EN ISO 105 B02:2000. Determined according to blue scale, by it degree 1 denotes the lowest fastness, degree 8 the highest one
A - Full Shade 0,05 % in PS
B - 0,05 % + 1 % TiO₂ in PS
- **Heat Resistance** - Was determined by injection moulding machine over the temperature range 200 - 300°C. Moldings were prepared after 5 minutes dwell time at each test temperature and were compared against control moulding prepared at the lowest test temperature - 180 °C (dyeing 0,1 % + 1 % TiO₂ in PS Krasten 127)
- **Migration** - Tested by placing a chips of coloured PS in contact with a sample of PS containing only 1 % TiO₂ for 1 day at 70°C. Any stain was assessed using ISO Grey Scale, where 5 indicates no stain.