

Technical Bulletin

P-09 RADGLO[®] UV Blue

P-09 RADGLO[®] UV Blue is a thermoset fluorescent pigment recommended for a wide range of applications where resistance to strong solvents and temperature is needed. It may also be used in water based latex systems, where long term shelf stability is required. P-09 RADGLO UV Blue is composed of a solid solution of dyestuffs in a thermoset sulphonamide-melamine-paraformaldehyde resin.

Typical Physical Properties

Melting point	Thermoset, non-melting
Decomposition temperature	>300°C
Specific gravity	1.4 g/ml
Bulking value	0.25 g/ml
Average particle size	5µm
Hegman grind	5.0-6.0
Oil absorption	56 g of oil / 100 g of pigment

Lightfastness & Heat Stability

Fluorescent pigments are more fugitive than conventional pigments. They are stable to indoor light or outdoor conditions other than direct sunlight. By exposure to outdoor sunlight the color will change. The degree of fading is dependent upon following factors:

- Color of the pigment
- Pigment loading and thickness of the end product. The higher the pigment loading and film thickness, the better the lightfastness will appear.
- Type of binder polymer
- Intensity and angle of the incident sunlight

The lightfastness may be improved by including UV-absorber(s) in the formulation and/or by making use of clear overcoats containing UV-absorber(s).

P-09 RADGLO UV Blue can be used for short dwell times in applications with processing temperatures up to 180°C (plasticized PVC formulations) without affecting the coloristic properties.

Applications & Storage

In view of the thermoset nature of P-09 RADGLO UV Blue, this pigment is especially recommended for applications demanding improved resistance to polar solvents, plasticizers, heat, pressure and migration. It is especially popular for security and tracing applications, including brand protection and invisible product coding. P-09 is relatively invisible in normal daylight, but produces a highly visible bright and vibrant color when exposed to ultraviolet or “black” light.

P-09 RADGLO UV Blue is UV reactive to invisibly mark valuable or trademarked items and packages, to address theft, counterfeiting, or product tampering.

Typical applications are:

- Tracers
- Screen inks
- Gravure inks
- Textile printing inks
- PVC plastisols and organosols
- Calendered PVC-foils
- Solvent based paints

It is especially recommended as a tracer pigment and brightener.

P-09 RADGLO UV Blue remains stable provided it is kept in a dry storage place at temperatures < 50°C.

Processing Considerations

P-09 RADGLO UV Blue is easy dispersible with high speed mixing and does not require additional grinding for proper dispersion into binder systems. Check the compatibility of P-09 in the solvents of your formulations. Use the following solubility table as a guideline.

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Solubility & Bleed

The effects of solvents and plasticizers on P-09 RADGLO UV Blue pigment, used for coatings, printing inks and paints is listed below. Fluorescent pigments in mixtures of various solvents or exposed to higher temperatures should be carefully tested prior to use. All data are average values and may vary by individual formulation.

Aliphatic Hydrocarbons	S	B
Mixed pentanes	5	5
Mixed hexanes	5	5
Heptane	5	5
Distillates 35-260°C	5	5
Aromatic Hydrocarbons	S	B
Ethylbenzene	5	4
Toluene	5	4
Xylene	5	4
Distillates 150-250°C	5	4-5
Alcohols	S	B
Methyl alcohol	5	3
Ethyl alcohol	5	2-3
Isopropyl alcohol	5	4
Butyl alcohol	5	3
Cyclohexanol	5	3
2-Ethylhexanol	5	4
Diacetone alcohol	3	2
Plasticizers	S	B
Dibutyl phthalate	5	3
Diocetyl phthalate	5	3
Diisodecyl phthalate	5	3
Diocetyl adipate	5	3
Diocetyl sebacate	5	5
Castor oil	5	5
Epoxidized soya oil	5	5

Ketones	S	B
Acetone	3	2
Methyl ethyl ketone (MEK)	3	2
Methyl isobutyl ketone	4	3
Ethyl butyl ketone	4	3
Diisobutyl ketone	4	3
Cyclohexanone	2	2
Isophorone	2	2
Esters	S	B
Ethyl acetate	4	2-3
Iso/n-Propyl acetate	4	3
n-Butyl acetate	5	3
Glycols & Ethers	S	B
Glycerine	5	5
Ethylene glycol	5	2-3
Diethylene glycol	5	3
Monopropylene glycol	5	4
Dipropylene glycol	5	1
Ethylene glycol monoethyl ether	4	1
Chlorinated Solvents	S	B
Carbon tetrachloride	5	3
Trichloroethylene	5	3
Perchloroethylene	5	3
Chlorobenzene	5	2-3
Methylene chloride	2	1
Ethylene chloride	2	2-3

Solubility (S)	
5	Insoluble
4	Very Slightly Soluble
3	Slightly Soluble
2	Fairly Soluble
1	Completely Soluble

Bleed (B)	
5	None
4	Very Slight
3	Slight
2	Moderate
1	Heavy

Regulatory and Ecotox Information

All components of P-09 RADGLO UV Blue are registered in EINECS. All components as well as the polymeric resin of P-09 RADGLO UV Blue are registered in TSCA. It is in conformity with the purity requirements of EN71 part 3. P-09 is free from heavy metals. For detailed information, please consult the individual MSDS.

Ver. 130610

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