

Phosphorescent pigments



References: YMO10D / YMO10W

Description

Arco Iris® phosphorescent pigments produce luminescence by absorbing optical radiation (excitation*). They are inorganic luminescent compounds that absorb visible, ultraviolet, and infrared light waves and slowly release persistent energy in the form of luminescence in the visible spectrum.

Photoluminescent pigments are microcrystals that are characterized by their performance, size, and color.

Appearance and Color

Phosphorescent pigments are semi-transparent and have low coverage. They appear greenish-white in daylight. The more yellow they are, the more europium they contain. They appear colorful and luminous in the dark. The most visible and effective colors are GREEN and TURQUOISE. Other phosphorescent colors have low luminance and afterglow.

Destination

Phosphorescent pigments are used in safety marking, ink and paint formulations, adhesives, plastics, granules, and other materials, such as synthetic fibers.

Technical data

GRANULOMETRY AND PERFORMANCE

High-performance pigments YMO10-D			
Particle size in microns (µm) *		Luminance in microcandlepower (mcd/m²)	
D10	38 µm	5 min	1168mcd/m2
D25		10 min	600mcd/m2
D50	62 µm	30 min	188mcd/m2
D90	97 µm	60 min	85mcd/m2
D97	119 µm	-	0,32 mcd/m²

CHEMICAL AND PHYSICAL PROPERTIES:

MELTING POINT: > 800°C
SOLUBILITY IN WATER: 0,3g/L à 20°C
APPROXIMATE DENSITY: 3,0g/cm3
PH (% in water): 10-11 à 20°C

CHEMICAL COMPOSITION: Dialuminum strontium tetraoxide

Ingredient	CAS No.	Contenu (%)
Aluminum Oxide	1344-28-1	20~50
Calcium Carbonate	471-34-1	0~20
Strontium Carbonate	02/05/33	30~60
Boric Acid	10043-35-3	1~6
Didysprosium trioxide	1308-87-8	0~1
Dieuropium trioxide	1308-96-9 0.	02~1

Traces of heavy metals			
Plomb(pb)	<1,0 ppm	Arsenic (As)	<0,5 ppm
Cadmium (Cd)	<0,2 ppm	Chrome IV	<0,02 ppm
		Mercure (Hg) <0,5 ppm	

Résistance à la température :

Lower size à 10-30µm Vert 600°C Turq 800°C Bleu 700°C	Sizes between 30~45µm Vert 700°C Turq 950°C Bleu 800°C
Sizes between 45~65µm Vert 760°C Turq 1050°C Bleu 950°C	Sizes between 80~100µm Vert 800°C Turq 1200°C Bleu 1000°C

Mixing and compatibility:

Do not grind. Mix by simple incorporation and/or stirring. Do not use metal containers; ceramic or plastic containers are preferable. The pigments are solid and insoluble. Mixing ratio: up to 35% by weight in all transparent media (resins, binders, plastics, glass, ink). Perfect compatibility with solvent-based media. Do not mix in aqueous media.

Storage, stability, and resistance:

Our phosphorescent pigments offer total resistance to light (UV degradation) and very good stability when exposed to heat, which is sufficient for most applications. This resistance allows for high performance over long periods of time. When stored in their packaging under normal ambient conditions, or incorporated into a protective medium (resin, plastic, glass, etc.), the pigments retain their original colors and intensity for several decades. Direct contact with metals, water, and acids should be avoided. For aqueous phase mixtures, use our waterproof pigments.

Definitions:

***Luminance**
Luminance is the amount of light energy emitted by phosphorescent pigments during afterglow, measured in microcandelas per square meter (mcd/m²).

***Afterglow**
The afterglow of a phosphorescent pigment refers to the partial persistence of the phosphorescence phenomenon after the excitation (light energy) has disappeared. The end of the afterglow is set at 0.32 mc/m².

*** Particle size and size distribution**
The D10, D50, and D90 data provide an idea of the size distribution of the pigments: a D10 of 10µm (micrometers) means that 10% of the photoluminescent pigments (by number) have a diameter of less than 10µm. D50 gives the median size: half of the pigments are smaller, half are larger. And 10% of the grains will have a size greater than D90. D10 is always smaller than D50, which is smaller than D90, and the closer they are, the more homogeneous the grain size will be.

*** Excitation**

This refers to the exposure of the pigment to light energy for a given period of time and at a given intensity. Measurements are taken using a sample illuminated by a 1000 lux fluorescent lamp for 10 minutes (tests in accordance with DIN67510 Part I, measurements expressed in microcandelas/m²).

*** Extinction**

Extinction refers to the time in minutes required for the luminance to be reduced to 0.32 mcd/m² from the moment the light excitation is stopped.

Nous ne garantissons pas les propriétés spécifiques des produits, ou leur compatibilité pour une méthode de mélange ou une destination particulière. Nous recommandons que chaque utilisateur pratique des tests sur chaque produit avant mise en production. Nous recommandons aussi que les produits soient manipulés par des techniciens entraînés afin d'assurer un maximum de sécurité.