

PHOSPHORESCENT PIGMENT

The classic “glow in the dark” or phosphorescent pigments consist of very fine crystals of zinc sulfide doped with copper (ZnS:Cu). The glow is due to the unique properties of crystalline zinc sulfide. Copper is added to the zinc sulfide as an activator. This allows the crystals to absorb light and slowly emit it over time. This slow emission is called phosphorescence.

After glow depends on the

- Particle size
- Excitation light source & intensity
- Pigment concentration & film thickness.

Applications:

phosphorescent pigments may be used in all types of paint, powder coatings, silkscreen inks, enamels and plastics. Some typical applications are:

- Warning and exit signs
- Fire fighting & mining safety gear
- Silkscreen printing on textiles and posters
- Toys and novelties
- Paper and Film Coating
- Fishing Lures
- Craft paints

Paints & Inks:

- Use a transparent vehicle with neutral or alkaline pH.
- Plan on using at least 20% pigment loading.

- To minimize settling use a viscous vehicle.
- Apply a white base coat under the phosphorescent layer.
- Apply a clear overcoat containing a UV absorber
- (we recommend an oxalanilide type) to protect the
- pigment and improve gloss.
- All additives should be free of heavy metal
- Compounds

Plastics:

- pigments are compatible with acrylics, polyesters, epoxies, PVC, polypropylene and polyethylenes (HDPE, LDPE, etc.).
- Material can be cast, dipped, coated, extruded or molded.
- Use only clear plastics
- Plan on using 20% to 50% pigment loadings.

CHEM COMP. ZnS:Cu

BODY COLOR Greenish

EMISSION COLOR Green

EMISSION PEAK (nm) 529 ± 4

SPECIFIC GRATIVITY 4.1

AV.PART. SIZE (μm) 22 ± 3

BRIGHTNESS OF AFTER GLOW (mcd/m²) 1min 300

BRIGHTNESS OF AFTER GLOW (mcd/m²) 3 min 95

BRIGHTNESS OF AFTER GLOW (mcd/m²) 5 min 55

BRIGHTNESS OF AFTER GLOW (mcd/m²) 1 min 25