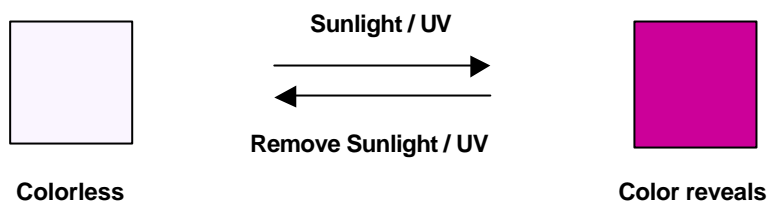


PLASOL PHOTOCHROMIC COLORS

I. Brief Introduction

Photochromic dyestuffs are substances exhibit phenomenon of reversible color change, which are induced by UV-light. The color reveals when it is exposed to sunlight / UV-light and lose this light activated coloration when the light source is removed. The color strength depends on the sunlight / UV- light.

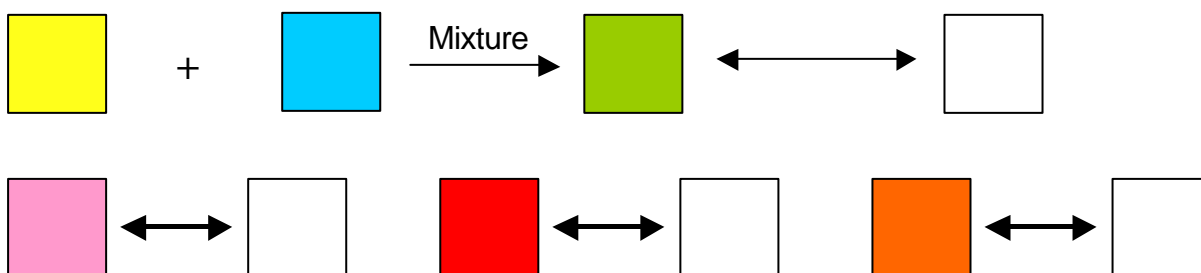


II. Products

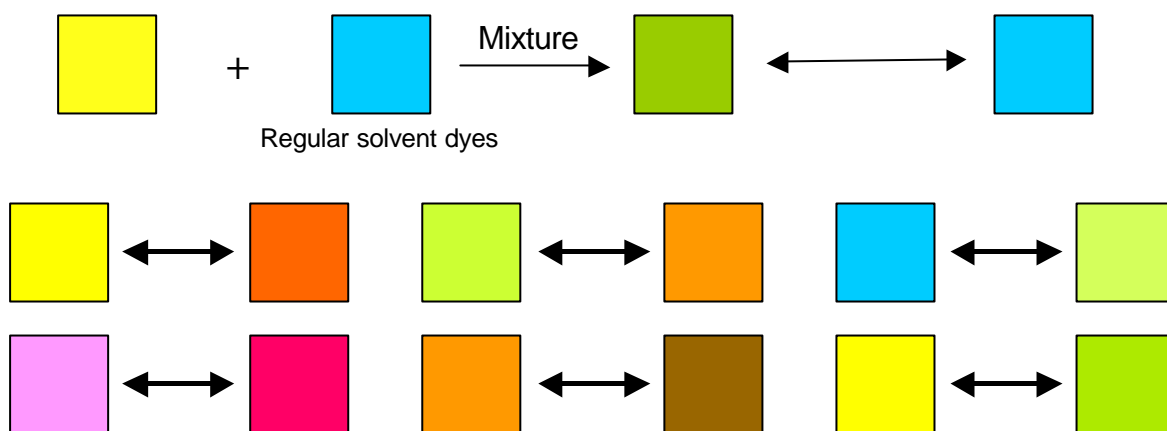
Shade	Color Base	Photochromic colorants				
		Dyestuffs	Microcapsule	PS Powder	PE Masterbatch	PMMA Masterbatch
	Yellow	YL-10	YL-10C	YL-10S	YL-10E	YL-10A
	Red	RL-30	RL-30C	RL-30S	RL-30E	RL-30A
	Blue	BL-60	BL-60C	BL-60S	BL-60E	BL-60A
	Violet	VL-70	VL-70C	VL-70S	VL-70E	VL-70A

III. Reference Color for Application color to color

By the three primary colors, you can create new colors as your expectation. It could be colorless to color.



The color can be changed from one to another by mixing photochromic colorants and regular solvent dyestuffs.



IV. Application

The photochromic dyes have generally been used in paints, inks, dyes and dyed fabrics etc. Finished products could be Doll hair, toy products, sunglasses, lunch boxes, crayons, jelly shoes, hair clips, hair combs, shoestrings, coasters, craft beads, PVC belts, watch bands, drinking straws, spoons, cups, frisbees, combs, greeting cards, stickers, business cards, UV detection devices, T-shirts, security badges, garments of all sorts, nail polish and so on.

V. Product's Feature

A. Photochromic Dyestuffs

1. The photochromic dye can be dissolved in various organic solvents such as toluene, xylene, methyl ethyl ketone, Ethyl acetate etc.
2. By mixing the primary colors, a color can be matched to show colorless or light color to color. And also can mix with other regular dyes to have the effect of color to color.
3. Heat resistance of photochromic dyestuffs is different. YL-10 at 240 , RL-30 at 222 , BL-60 at 256 and VL-70 at 236 .

B. Photochromic Microcapsule powder (C-Series)

1. Photochromic microcapsule powder is made from photochromic dyes and some additives, which is applied as a pigment.
2. The content doesn't cause elution towards outside and it is safe and stable in its color change function for a long period of time.
3. Distribution of particle size is between 1~6 micrometer and heat resistance is at 280 .
4. It is easy to disperse and compatible with regular pigments.

C. Photochromic PS powder (S-Series)

1. Photochromic PS powder is made from 1.5 photochromic dye and 98.5 resin by extrusion process. Then mill it to be very fine powders, which is about 8~ 15 μ .
2. The water content is below 0.5% and the heat resistant is at 140 .

D. Photochromic masterbatch (E-Series/ A-Series)

1. Photochromic masterbatches (PE/PMMA) are made from 1% photochromic dyes, 99% of compounds, special photo-stabilizers and antioxidants.
2. Our PE photochromic masterbatch can be applied in PE, PP, TPR and EVA etc.
3. PMMA photochromic masterbatch especially apply to PMMA.

VI. The Photochromic Colorant Type & Application

Materials	Solvent type - inks, paints		Water soluble type - inks, paints		Plastic - injection, extrusion	
	Application	Advise addition	Application	Advise addition	Application	Advise addition
Photochromic dyes		0.02% ~0.1%		-		0.01%~0.1%
Photochromic pigment		5.0% ~ 15%		5.0% ~ 15%		0.5% ~ 5.0%
Photochromic Plastic masterbatch		-		-		1.0% ~ 5.0%

good fair poor

VII. Applied attention

- A. All products are FDA approved. There is no harmfulness to body health. Fit the requirements for the demands of safety toys and the food package standards.
- B. Photochromic dyes can be applied to PE, PP, PMMA, AC, PU, TPU, TPR, PS, MS, EVA and NYLON12 etc. (photo-stabilizer and antioxidants are available on request)
- C. The products must be stored at room temperature, in dry area and not exposed to sun. The shelf life is one year.
- D. Photochromic dyes can not be applied with UV absorber.
- E. Different solvents and materials will affect the change in color of the products.
- F. The ability of reverse might be fatigued if exposed to UV light, acid condition, wet and radiation for a long time.
- G. When colorants are applied for screenprint, 80~150 mesh is recommended.
- H. The best ink basic materials are PU / Acrylic resin.