23300 Permanent yellow, light

The different shades of this group of yellow pigments largely correspond to those of the corresponding cadmium yellow shades. Thus, this group of yellow shades can fully replace the yellow cadmium pigments in terms of color.

The names under which the various yellow shades are marketed are purely manufacturer names and have nothing to do with the chemical composition of the pigments. For example, the name "permanent yellow" (from Latin permanere = to last) and the prefix "Hansa" are used by the Hoechst company, while the name "true yellow" is used by an artist's paint manufacturer. Other manufacturers of finished colors use their company name, e.g. "Talensgelb" or "Winsor yellow".

All yellow pigments in this group have in common that they are organic dyes from the group of monoazo pigments. The first Hansagelb, Pigment Yellow 1, came onto the market in 1910. Over the decades, azo pigments have been continuously improved. As a result, the grades commonly used today can hardly be compared in quality with the dyes known as "hansa yellow" at that time.

Hansa yellows are characterized by very good hiding power. The light fastness in the solid shade is 8 or "only" 7-8. In dilutions, somewhat lower values result, e.g. for brilliant yellow (PY 74) in strong dilution 6-7, for studio yellow (PY 3) 6. Furthermore, most hansa yellows are resistant to acids and alkalis. Permanent yellow HKA (PY 6) and permanent yellow light (PY 151) are less resistant, with values between 3 and 4. Lime resistance is also not always satisfactory, for example, permanent yellow HKA (PY 6) is only 1.

In some solvents, these organic dyes are soluble, which can be noticed by bleeding or efflorescence. Bleeding/blooming occurs most frequently in gasoline (ethyl alcohol), ethyl glycol, toluene, xylene, butyl acetate and methyl ethyl ketone. No bleeding/blooming takes place in water, and very little or none in linseed oil. Due to the partial solubility of the organic pigments in certain solvents, in addition to the effect of bleeding, a recrystallization process is also caused. In this process, smaller pigment particles go into solution, but subsequently recrystallize to larger particles, so that the particle size increases. This can result in a color shift to red. In general, organic yellow pigments can still be wetted relatively easily. For processing into oil color, it is sufficient to apply oil (linseed or walnut oil) to the pigment in small quantities. For larger quantities, the pigment should be rubbed with a glass runner after filling. Noteworthy here, as with all organic pigments, is the high binder requirement, which is due to the small particle size. It is therefore advisable to replace about 10% of the fatty oils with dammar or synthetic resin solution (e.g. cyclohexanone resin) dissolved 1:2 in turpentine oil. The pure glaze pigment should only be used in thin layers, yellow tones mixed with other pigments can also be painted opaque in thicker layers (compare also other organic pigments!).

For ecological reasons, hansa yellow is nowadays often used as a substitute for the toxic, lead-containing chrome yellow.

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