23050, 23060, 23065, 23070, 23080 Phthaloblue, Phthalocyanine Blue

Phthaloblue is normally a colorimetrically neutral shade of blue that has neither a red nor a yellow cast. This shade is important in printing technology and in color photography under the name "cyan". The white blend of phthaloblue is quite close to manganese blue. In addition to the neutral standard shade, more reddish variants are now also available on the market. The purity of the shade cannot be achieved by Prussian blue.

Phthaloblue is an organic dye from the phthalocyanine group. These are derived from phthalic acid. In the center of the molecule, a copper atom is chemically incorporated in an extremely stable manner, similar to the natural dyes hemoglobin (containing iron) and chlorophyll (containing magnesium). A pigment not containing this central atom appears turquoise (Pigment Blue 16). The phthalocyanine dyes that are commercially available today have the highest lightfastness and are weather resistant.

The concerns that otherwise apply to copper-containing pigments do not apply here, since the copper is integrated into the dye molecule in a complex bond. In acidic media, in alkali and in lime, the phthalocyanine dyes achieve the best fastness values (5). Unfortunately, solvent fastness is not always good and pigment particles must be expected to go into solution, i.e. the color bleeds or bleeds out. However, this does not apply to all phthalocyanine blue grades. There are also solventfast pigments of this type, for example phthaloblue royal blue (15:3) or phthaloblue red tint (15:6). Phthaloblue is one of the most intensely colored pigments of all and has a naturally glazing character. Additions of various white pigments give the color an opaque effect. The color is so intense that even at dilutions of 1:10, strong blue tones can still be achieved.

When preparing water-based inks, prior wetting with isopropyl alcohol is absolutely necessary.

It is up to the user whether he stretches the paint with barite from the outset (which reduces but does not eliminate the glazing ability), or whether he prefers to work with the pure shade, which can then be mixed as desired. For watercolors, the phthalocyanine pigments are particularly popular because of their high lightfastness. When preparing tempera paint, a few drops of ox gall should also be added to prevent the emulsion from dissolving. This phenomenon often occurs with organic pigments, as they have a greater affinity for oily components than for aqueous ones. Wetting is also useful in the production of oil color. It makes the work easier if the pigment is first rubbed with alcohol and then waited until this has evaporated. Then scrape the pigment together with a spatula and work in oil. The color is then rubbed thoroughly with the glass runner. It is possible to simply apply oil to the pigment, but the results may not be as good.

Phthalocyanines were developed as early as the 1920s. In 1929, Scottish Dyes (now part of ICI) applied for a patent on phthalocyanine blue, but it was to be several years before reliable pigments were available to the artist. After the war, the modern pigment was initially slow to establish itself on the market, because people in the trade were sometimes unhealthily skeptical of anything new. Phthaloblue has the indisputable advantage of being a very pure tone that is excellently suited for mixing other blues, greens and numerous violet tones. The comparable results with the still frequently used Prussian blue speak for themselves. It took decades until the manufacturers of watercolor boxes, especially for schools, finally decided to replace Prussian Blue with the more durable and more beautiful phthalocyanine blue. In the meantime, it is hard to imagine the color scales without this blue.

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