

Ochre

Chemical composition: various hydrous iron oxides, especially goethite ($\text{Fe}_2\text{O}_3\cdot\text{H}_2\text{O}$).

An almost infinite variety of naturally occurring earth pigments are known under the name "ocher". The color designation "ocher" speaks for itself; every child knows what is meant by it: correctly formulated, one would have to say that it is a broken, grayish orange-yellow. After all, very few people are capable of mixing an ochre tone from other colors!

Most commonly encountered are very light ochre varieties, known in the trade in Germany as "light ochre" or "yellow ochre". Dark ochre or gold ochre is more brownish, red ochre more reddish, etc. Other varieties include olive ochre and orange ochre, not to mention the countless intermediate shades.

French ochres (40010-40090) are among the higher quality varieties. The individual qualities are offered here under a fixed letter code.

Other ochre varieties come mainly from Italy, England and also - occasionally - from Germany, as well as other countries.

Amberger Gelb (40280) is a German ochre variety, which is preferably used in Bavaria for the design of historical buildings.

Satinober" refers to an orange-golden shade of ochre.

Oxid yellow is a synthetically produced ochre shade that is increasingly replacing the natural product.

As different as the color shades can be, as differentiated is the chemical structure. What all ochre grades have in common is that they are the hydrate of III-valent iron oxide, although the water content can vary. In addition to the iron oxide hydrate, the ochres contain numerous aluminum compounds as non-coloring components, such as silicates, oxides and hydroxides (alumina). The higher the content of iron compounds, the more fiery the color shades turn out. A lower water content leads to a reddish tint, traces of manganese turn ochre greenish to brownish. The transition to the umber varieties can be smooth. Lower-grade ochre varieties can be recognized, among other things, by their less attractive color. They may contain lime or sandy components as admixtures, which can be recognized by a crunching sound when rubbed and by their coarser consistency.

All types of ochre are semi-opaque to well-opaque pigments, which are all completely lightfast and compatible with all binders. Thus, ochre is a universal pigment that can be usefully employed in any technique. Ochre glazes have a slightly opacifying effect, which can be exploited for certain effects. It is indispensable not only in landscape painting, where it can be used very well for mixing natural green tones. Mixing ochre shades from the primary colors would be much too laborious and time-consuming. Small additions of ochre tones are essential for depicting air, in portrait painting, and for breaking up overly variegated hues. Watercolors that are thinly underlaid with ochre are thus given a harmonious overall light.

As a natural product found in many places, ochre is one of those pigments that have been used by mankind since time immemorial. Due to its low price and other positive properties, this natural product still has a significant value today. The fact that some purchased ready-to-use ochre paints contain admixtures of artificially produced oxide yellow need strictly speaking only interest the restorer and does not detract from the quality of the material in any way!

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Their specific gravity varies between 2.1-3.4. The oil requirement reaches 45-60% of the weight for the light ochres, and up to 150% for the dark ochres. The grain size is about 1-5 μ .

When heated, the ochres take on a red color due to the formation of Fe_2O (similar to bricks and tiles). In hydrochloric acids, the ochres partially dissolve with the formation of ferric chloride. Sulfurous acid can gradually bleach ocher paints, but they resist the action of light, air and alkalis.

Ochre is sold in various shades (e.g. yellow, red, brown ochre, etc.) and is used, among other things, for all kinds of decorative and artistic painting, for floor painting, for dyeing leather, wallpaper, oilcloth, artificial stones, for the production of pastel, colored and chalk pencils on a large scale.

Since ocher is found in nature in many places and does not present any particular processing difficulties, it has been used as a painter's color since the most ancient times; for example, the cave drawings of Altamira are painted with ocher. The ancient Greeks called ocher "ochra", the Romans "sil".