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# Pigments

(Pigmente)

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Product Information

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- **OCHRE YELLOW** (OCKER GELB)

A product of the natural decomposition of rocks and minerals containing iron. The colouring substance is iron oxide hydrate. It can be mixed with all pigments and is absolutely lightfast and weatherproof. Country of origin is France, but yellow ochre is found all over the world. Compatible to all binding agents.

- **OCHRE RED** (OCKER ROT)

Natural earth pigment, burnt artificially analogue to the burning process of bricks. The colouring substances are iron oxides. Is extracted by open cast mining. All other details like ochre yellow.

- **TERRA DI SIENNA RAW**

(TERRA DI SIENA NATUR)

Natural earth pigment, yellow iron oxide hydrate. Found in Tuscany, Corsica, Sardinia, partly in Germany: Bavaria, Palatinate and in the Harz mountains. It is absolutely lightfast, weatherproof and compatible to all binding agents, a typical pigment for lazures. It lazures also in lime and is compatible to all pigments. Is extracted by open cast mining.

- **TERRA DI SIENNA BURNT**

(TERRA DI SIENA GEBRANNT)

Natural earth pigment, burnt artificially. The burning process drives out the chemical bound water. In opposite to the ochres, Terra di Sienna contains a certain amount of silicate. Compatible to all pigments and binding agents, an excellent pigment for lazures. Is extracted by open cast mining.

- **ENGLISH RED** (ENGLISCHROT)

Natural earth pigment, burnt artificially – similar to the Red Ochre. It is absolutely lightfast, weatherproof and compatible to all pigments and binding agents. Is extracted by open cast mining.

- **UMBER GREEN DARK**

(UMBRA GRÜNlich DUNKEL)

Mixture of green mineral pigments (Spinel Green, Chrome oxide green) and talcum. Unpoisonous and absolutely lightfast and weatherproof. Compatible to all pigments and binding agents.

- **UMBER BURNT** (UMBRA GEBRANNT)

- **UMBER LIGHT BROWN** (UMBRA REHBRAUN)

- **UMBER REDDISH** (UMBRA RÖTLICH)

- **UMBER GREEN LIGHT** (UMBRA GRÜNL. HELL)

Natural earth pigments, the colouring substances are iron hydrates with manganese oxide hydrates and clay earth silicate. They accelerate the drying process in oil paints because of the manganese contingent. Umbers are found in different hues, according to the yield of iron oxide and silicate. They are compatible to all pigments and binding agents. They darken slightly in oil, are unpoisonous, absolutely lightfast and weatherproof.

- **CASSEL EARTH** (CASSELER BRAUN)

Lignite (brown coal) containing manganese, plant pigment, in perpetuity not lightfast, not resistant to alkali and acid, therefore not suitable for application in the exterior. Is known as nut tree stain if mixed 3 – 5% of soda. Relatively bad wettable with water, therefore a wetting agent (e.g. spirit) has to be used to make it pasty, then dilutable with water.

- **SOOTBLACK** (REBSCHWARZ)

Plant pigment, made of carbonised vines, chemical nearly pure carbon. Lightfast and applicable in all techniques, compatible to all pigments and binding agents. Slows the drying process in oil like all black pigments. Not suitable for application in the exterior.

- **TITANIUM WHITE RUTILE** (TITANWEIß RUTIL)

Artificial mineral pigment gained out of a natural mineral (Rutile) by dissolving, cleaning and precipitation. In opposite to the variety Anatas the Rutil has best covering characteristics in all binding agents. Unpoisonous and absolutely lightfast and weatherproof. Compatible to all pigments and binding agents.



- **ULTRAMARINE BLUE (ULTRAMARINBLAU)**

Artificial mineral pigment, made by heating soda, clay and sulphur. Unpoisonous (used as food colouring), mixable with all earth pigments, but not with copper- and lead compounds.

Ultramarine blue is resistant to lime, lightfast and weatherproof, but not acid resistant. Because our atmosphere today has a slightly acidic character, the use of Ultramarine Blue in the exterior is limited (can lead to blackening or decolourisation). A typical pigment for lazures.

- **ULTRAMARINE VIOLET**

Artificial mineral pigment, mixture of Ultramarine Red and Ultramarine Blue. Made by heating soda, clay and sulphur at a slightly different temperature. Unpoisonous (used as food colouring), mixable with all earth pigments, but not with copper- and lead compounds.

Not suitable for application in the exterior (see Ultramarine Blue).

- **SPINEL-PIGMENTS**

Spinel is a mineral of volcanic source. Chemically, they are magnesium aluminates ( $MgAl_2O_4$ ). Most Spinel is colourless. By exchanging different ions in the volcanic activity, some very colourful Spinel are derived. These colourful Spinel are sold as precious stones. The yellow to orange-red stone is named Rubicell, the deep black stone from Ceylon containing iron is named Pleonast. The famous red stone in the English crown is also a Spinel, not a Ruby.

According to the exchanged trace elements, a distinction is drawn between aluminium- iron (III)-, chrome-, vanadium-, and titanium spinels.

**Manufacturing:**

*Red to pink*

gained by exchanging of chrome (III)- and vanadium ions

*Orange*

through a bigger portion of vanadium

*Purple blue to turquoise*

through iron (II) and a little iron (III)

*Blue*

through 0.001% cobalt with 0.4 - 3% iron

*Green*

through iron (II) and manganese

The mineral Spinel and the metals are mixed wet and then heated up to 1200 - 1600°C.

Thereby an exchange of ions is taking place.

The metal ions are embedded very firmly into the mineral structure and can't be washed out. Spinel has a hardness grade of 8 and is resistant to acids and bases.

The pigments are washed and grinded after tempering to get the appropriate grain size.

These pigments are used for tinting precious stones for the fashion market and for the burning process of ceramics.

Minerals that are basically Spinel are named e.g. Chromite, Franklinite, Gahnite, Magnetite and several others. Spinel-pigments are compatible to all binding agents. They fulfill the highest demands of being lightfast, weatherproof and resistant to chemicals.

They are toxicologically harmless, so they are approved for tinting plastic dishes and toys.

They are also harmless in incineration plants, because the burning temperature is approx.

1000°C while the pigments resist up to 1400 - 1600°C.

**Please refer to the valid pricelist for package sizes and product prices.**

The above information has been compiled in accordance with the best of our experience and knowledge. Owing to the application methods and environmental influences, as well as the various surface properties, no liabilities or legalities pertaining to the individual recommendations can be entertained. Prior to application, the suitability of the product is to be tested (trial coat). The validity of the text ceases with revisions or product modifications.

You will find the latest product information at

>> [www.kreidezeit.de](http://www.kreidezeit.de) << or directly at Kreidezeit.

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