

58200 China Clay, English

Chemical composition : Aluminum silicate hydrate, $\text{Al}_4(\text{Si}_4\text{O}_{10})(\text{OH})_8$

In the English-speaking world and in painting technology, the term used for Chinese clay or kaolin. Kaolin or china clay is the collective name for clay rocks, colloquially known as clays, with a varying high proportion of elutriable constituents. It usually stands for pure iron-free clay.

In Europe, since the report of Francois Xavier d'Entrecolles, the designation for fine-earth, white loose rock in Europe has become naturalized as kaolin. Kaolin was named after the place where it was found at the Kaoling Pass in the Chinese province of Kiangsi.

China Clay is a weathering product of alkali feldspars and, depending on the deposit, contains natural admixtures such as traces of quartz, muscovite, magnetite, etc. Kaolins are formed hydrothermally or by weathering from feldspar-rich source rocks, within humid climates with abundant precipitation, humus formation and presence of carboxylic acids at pH values below 6.

The microscopic hexagonal platelets account for the plasticity of China Clay. Kaolinite can also be formed in other ways, e.g., from plagioclase or by transformation from volcanic glass. Clay formed from feldspar by weathering is pure white if it has not been subsequently discolored by iron oxides.

If the clay is washed out and deposited elsewhere, it will be called Letten, Loess, Loam or Marl, depending on the type and proportion of admixtures.

The first sites of the 18th century were in Germany at Aue and Hafnerzell; in France at Limoges; in England in the province of Cornwall; in Italy at Vicenz and in Denmark on Bornholm.

Clay is dug in highly mechanized open-pit mines. Since raw kaolins always contain quartz and usually still undecomposed feldspars, they are usually prepared by slurring.

Natural kaolins are hydrophilic, i.e. they show good wettability by water, polar solvents and binders. The structure of the particles consists of thin, usually six-sided, flexible platelets a few hundredths of a mm thick and 0.2 - 1 mm in diameter, average particle diameter is 0.4 - 0.8 μ colloidal particles.

Source: "White Colorants" (2000) M.H. Bernd Hering