

# BENEFICIATION OF CHINA CLAY

Major **Impurities in China Clay** are quartz, mica, feldspar and iron oxide minerals. China clay is an important raw material for many industries like rubber, textile, paper, pharmaceutical, cosmetic, paint, and refractory besides ceramic industry. For any value-added application, the run-of-mines (ROM) clay is to be processed to remove or reduce the ancillary mineral impurities associated with the same. Beneficiation helps to achieve required particle size and size distribution and also to attain other physical and optical properties for the clay. [Refer to the article [Improvement in the Quality of Indian China Clay after Various Treatments](#)]. The different processes generally employed for beneficiation of china clays are:

1. Size separation through levigation technique;



2. Hydrocycloning by wet route;
3. Magnetic separation by high intensity magnetic separator (HIMS);

4. Froth flotation;
5. Deflocculation;
6. Chemical treatments like Acid Leaching and Bleaching.
7. Drying
8. Micronizing
9. Air-classification and Surface treatment.



The '**Levigation**' process by which the washing is done, involves passing the clay slurry through a series of troughs or channels with different slopes. This process aids in the settling of grit and other heavy mineral while floating of light fractions like mica. Settling of finest quality takes place in the final tank. This beneficiated clay is then dried and marketed to different industries as per the required specification and grading.

**‘Micronizing’** includes Test for physical properties like Bulk density, Oil absorption, Whiteness, and Particle - size distribution analysis etc. Sometimes, Surface Treatment is also done for testing of hydrophobicity, oil absorption and uniformity of coating.

Mining and beneficiating activities often occur in a single location. De-colorization of clay is also attempted for certain clays which are coloured due to the presence of iron and titanium oxides. This is important since colour after firing is an important characteristic criterion of the china clay which is required for Ceramic Industry and sometimes in refractory industry too.

Source: <http://viewforyou.blogspot.in/2010/02/beneficiation-of-china-clay.html>