



## About Living Clay®

Living Clay is a calcium based all natural Bentonite clay of the Montmorillonite/Smectite group. Unlike other clays, only Smectites can absorb and adsorb. It is characterized by its expandable properties. Living Clay is often referred to as a green swelling clay.

This rare natural desert clay, obtained from a sub-surface mine in California, has been protected from leaching by the climate. In addition this particular clay deposit was sealed away and isolated from the natural elements by a cap of zeolite minerals for forty-three million years.

Because its adsorptive properties have not been compromised by air or ground water contaminants, this highly charged all natural Calcium Bentonite Clay has a drawing power of 33 times its molecular weight. Its extremely strong adsorptive and absorptive properties make it ideal for use in deep cleansing, clarifying of the skin, facial masks, body wraps, detoxification and many other uses.

### Adsorption and Absorption

The two words are similar but their differences are fundamental to understanding how clay minerals function and how clay works. Clays having the ability to absorb and adsorb are called Living or Active clays, because they are capable of changing and exchanging. Adsorption describes the process by which the charged particles of other substances combine with the charged particles on the outer surface of the clay molecule. First imagine the structure of the clay molecule to be similar to a stack of business cards with spaces in between the cards. The clay molecule has unsatisfied ionic bonds around its edges and naturally seeks to satisfy those bonds. For this to happen it must come into contact with a molecule of another substance with unsatisfied bonds that carry an opposite electrical (ionic) charge. When the two molecules meet, the ions held on the outer surface of the clay molecule are exchanged with the ions held on the outside surface of the molecule of the other substance.

Clay molecules carry a negative electrical charge while impurities carry a positive charge. With the clay the positively charged ions are attracted to the negatively charged surfaces of the clay molecule. An exchange reaction occurs in which the clay mineral ions are swapped for the ions of the positive charged substance. The clay molecule is now electrically satisfied and holds onto the positive ion until our bodies can eliminate both.

Absorption is a slower and more complex process. Acting like a sponge, the clay molecule draws other substances into its internal structure. Absorption can only occur when the foreign substance has undergone a chemical change and is then allowed to enter the clay's molecular inner structure. Once the foreign substance has undergone the chemical change, it enters into the spaces between the clay's inner structures. So the ions that were formerly only sticking to the surface of the clay's outer structure through ionic bonding, are now pulled inside the clay molecule. This is the primary reason why absorptive clays are labeled as mobile layered or expandable clays. The more the clay expands and its layers swell the more substances that are pulled into the clay's inner structure.

All absorbent clays have a charge on their inner layers. This means that charged ions sit between the layers of the clay molecule surrounded by water molecules. The clay expands as foreign substances are absorbed and fill the spaces between the clay molecule's stacked layers. Absorbent clay will absorb positively charged ions and impurities and ignore negatively charged nutrients.

On a molecular level, Robert T. Marin, a mineralogist at MIT, points to Bentonite's minute particle size that creates a large surface area in proportion to the volume used. "The greater the surface area, the greater its power to pick up positively charged particles of ions." Mr. Marin stated that one gram of this clay has a surface area of 800 square meters, thus the greater the surface area the greater the power to pick up positive charged ions many times its own weight.

The pH of Living Clay is 9.7, and thus it acts as an alkalizing agent for the body. The pH scale goes from 0 to 14, with 7 being neutral. Below 7 is acid and above 7 is alkaline. Clay helps balance the body's pH level. Clay baths are increasing popular for detoxing, cleansing the skin and balancing the bodies pH levels.

To sum it all up, Living Clay supplies the best, all natural, most effective clay available today. We are very pleased to be able to offer it to you in all of our products. You can't buy more potent clay from any other source in the world, and therefore, it is the **ONLY** clay we will use in our products. We settle for nothing less than the **BEST** for our customers!