

None of your Beeswax? Of course it is!



*There are so many questions that keep popping up about the materials that we use, where they come from, and how they are processed. When we talk about beeswax, terms such as **pharmaceutical grade**, **bleaching**, **refined** and **filtered** are commonly used. This article seeks to offer up the materials definitions that are most important to you.*



Worker honeybee with wax scales from *Beeswax: Production, Harvesting, Processing and Products* by William Coggshall & Roger Morse, published by Wicwas Press, 1984.

Beeswax is secreted by wax glands in the bee's abdominal area and used to create the honeycombs of the hive. Pure beeswax is composed solely of carbon, hydrogen, and oxygen. Its natural color when it is secreted is white. When beeswax is harvested from the hive it is often contaminated with impurities, which discolor it. At this stage it is called unrefined or crude beeswax.



(Crude Beeswax from Ethiopia)



(Crude Beeswax Domestic)



(Crude Beeswax from New Zealand)

Unrefined or **crude beeswax** is colored in a range of earthy hues from yellow to black. This coloration is caused by pollen, propolis (resin), and dirt. If you use unrefined wax for its color, it is important not to assume that the color is permanent because the color is organic matter, which is not necessarily stable in light and is subject to fading, darkening, or a color shift.

These are reasons why you would most likely want to use decolorized, white beeswax for encaustic. You may wonder how does the wax get whitened? Artist manufacturers avoid the term "bleached beeswax" because it implies the use of chemical bleaches. But the wax industry uses the term for the mechanical as well as the chemical methods of decolorizing beeswax.

Chemical bleaching is not the best choice for artists for two reasons. For one, chemical bleaching (which uses either potassium permanganate & phosphoric acid or sulfuric acid or various peroxides) does not always mean removing the colorant. In many cases it simply masks it. It is often used to whiten colorants that non-chemical bleaching can't, but these colorants can later return to their original color. Furthermore, chemical bleaching can be harsh on the wax, creating free fatty acids and making the wax more reactive to pigments and pollutants.

Sun bleaching exposes the wax to the ultraviolet light of the sun, which breaks down the colorants. This is a gentle and effective method of decolorizing the wax. The process, however, is expensive on an industrial scale because it requires so much space, but it is also the most accessible method for artists who want to bleach their own wax on a small scale.



Sun bleached beeswax plant from *The Chemistry and Technology of Waxes* by Albin H. Warth, published by Reinhold Publishing Company, 1956.

Filtration is a process in which the wax is forced under high pressure through filters of activated carbon and clay that absorb the colorants and take out all foreign matter. Filtration is preferable to chemical bleaching because it maintains the structural integrity of the wax. It is also, in the long run, the least expensive and the most practical of the three methods. It is the best choice for artist material.



Example of a Filter

Pharmaceutical grade beeswax is a standard set by the government that certifies that the wax meets certain chemical requirements and that it is pure beeswax. The chemical standards (such as its ability to be saponified) are of importance to the cosmetic and pharmaceutical use of beeswax. For the artist, the real importance of pharmaceutical grade beeswax is that it is a guarantee that the beeswax has not been adulterated with other waxes (such as paraffin or microcrystalline), rosins, stearic acid, or tallow. However, the term *pharmaceutical grade* does not refer to the method by which it has been decolorized. Artists should seek out wax that is both guaranteed 100% beeswax and filtered or sun bleached.

And, in case you're wondering, R&F uses only pharmaceutical grade filtered beeswax.