

# Petrified and Agatized Wood Collection

This collection contains a wide variety of petrified and agatized wood from the U.S. Most of the pieces come from Arizona, where petrified wood is most often found. Many other countries and states represented within the collection are Peru, North Africa, California, Oregon, Washington, New Mexico, and Nevada. Specimens range from an assortment of different colors, shapes, and sizes with the largest specimen measuring 50cm in diameter.

Petrified Wood is a type of fossil in which all organic materials have been replaced by minerals. It is no longer actually wood, but is then considered to be a mineral and inorganic. "Petrified wood is the result of a process called petrification (or petrification), meaning 'to change into stone'."<sup>2</sup> Petrified wood occurs with three major ingredients: wood, water, and mud consisting mainly of volcanic ash. The petrification process occurs under packed mud when wood is buried under silicate sediment low in oxygen. This environment keeps the fallen logs from rapid decomposition. Mineral-rich water flowing over volcanic ash deposits minerals into the plant's cells and replaces the cellulose with quartz (SiO<sub>2</sub>), turning the wood to stone. The original structure of the wood is preserved down to a microscopic level. Because of this intensity in detail, one can observe and conclude what conditions, landscape, and climate might have been like hundreds of years ago.

How long the petrification process takes is based more on conditions such as pH levels and temperature rather than time.<sup>3</sup>

Petrified wood comes in a variety of different shades. Pure quartz is colorless, but when impurities or additional elements are present the mineral takes on various tints of different colors. The chart below describes which elements result in each color.

Mineral Name	Color
Carbon	Black
Cobalt	Green/Blue
Chromium	Green/Blue
Copper	Green/Blue
Iron Oxides	Red, Brown, Yellow
Manganese	Pink/Orange
Manganese Oxides	Black
Silica	White/Grey

Links:

Petrified Wood

<http://www.yourgemologist.com/Kids/petrifiedwood/petrifiedwood.html>

The Process of Petrification

<http://www.geocities.com/Yosemite/Campground/5660/palette.html>

### **Petrified Wood Facts<sup>3</sup>:**

- Petrified wood has a Mohs hardness of 7, the same as quartz.
- Petrified wood is the official state fossil of Arizona and Louisiana.
- Petrified wood is Washington's state gem.
- Petrified wood is the state stone of Texas and Mississippi.

<sup>1</sup> "Petrified Wood". Desert USA. 2007. Digital West Media, Inc. 28 September 2007.  
<<http://www.desertusa.com/mag00/jan/papr/rock.html>>.

<sup>2</sup> "Petrified Wood". KMF Rocks. 2007. WebRing, Inc. 28 September 2007.  
<<http://www.mineralgallery.co.za/woodopal.htm>>.

<sup>3</sup> "Petrified Wood: To Become Stony". Physical Geology 2005. 2005. Earlham College.  
<<http://www.earlham.edu/~tinkeem/web/petwood.htm>>.