How Wood Turns To Stone

From a living tree to semiprecious stone, fossilization seems like magic. But the magic of petrification is just the magic of chemistry. Like any chemical reaction (acid + base = salt + water), petrification starts with raw ingredients: wood, water and mud. The wood was from primitive conifers that tumbled and battered their way downstream. This driftwood came to rest at the bottom of the murky waters in what is now the Petrified Forest (and other similar locations) and was quickly buried by mud and sand. It was the mud that was the real key to petrification. Not just any mud would do. These ancient muds contained volcanic ash (high in sulfuric acid content), belched from volcanoes. The volcanic ash decomposed, releasing chemicals into the water. As the water seeped through the buried logs, these chemicals reacted with the wood, and tiny crystals began forming. Little by little, the crystals grew, encasing the wood and turning the trees into stone. As the chemical magic of petrification worked on, the stream added more mud and sand, burying the logs beneath hundreds of feet of sediment, where they were protected from the ravages of time and decay. Over the years the Earth surface changed and what was once a swamp became a desert. As a few million years passed and through erosion of rain, wind and plate movement these fossils started to surface again allowing us to enjoy these marvels of nature.

Source: International Petrified Forest Museum of the Americas Dinosaur Park