

## [A Closer Look at Asbestos Fibers](#)

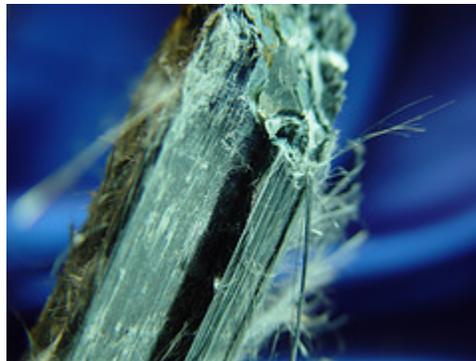
(Posted by Tom Lamb at [www.AsbestosHUB.com](http://www.AsbestosHUB.com) on April 16, 2010; see <http://bit.ly/bi8wCB>)

Asbestos is a naturally occurring mineral, but different from other naturally occurring minerals in that it is a crystal and composed of long thin fibers. Asbestos is classified into two groups: Serpentine and Amphibole.



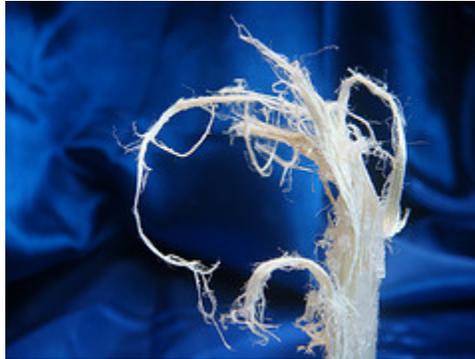
Chrysotile asbestos is the most commonly known type in the Serpentine group and it was the most widely used commercially. Chrysotile asbestos is classified as a sheet silicate, which means it forms flat sheets of long, thin fibers. Chrysotile is more easily woven into cloth than other types of asbestos. (*Pictured: Chrysotile from [Asbestorama](#)*)

The Amphibole group has 5 types of asbestos: Amosite, Crocidolite, Tremolite, Actinolite, and Anthophyllite. The most common Amphibole asbestos types are Amosite (brown asbestos) and Crocidolite (blue asbestos). (*Pictured: Crocidolite by [Asbestorama](#)*)



Tremolite, Actinolite, and Anthophyllite are rare. Asbestos types in the Amphibole group are classified as chain silicates, which means they have a chain-like structure of fibers. Amosite is actually an acronym for Asbestos Mines of South Africa. Medical studies suggest that Amosite and Crocidolite are more dangerous when inhaled than Chrysotile.

Asbestos is an indestructible material and because of its versatility, has been put to many uses over the years, such as bricks, pipe coverings, brake linings, ceiling tiles, floor tiles, fire-resistant work clothes, as an insulator or fire retardant, or as a binder. (*Pictured: Tremolite from [Asbestorama](#)*)



### **It is a well-known fact that asbestos is dangerous to humans, but do you know *why*?**

In its raw state, asbestos is friable, which means it can be easily broken into tiny microscopic fibers and inhaled. Individual asbestos fibers are smaller than a human hair, and some are so small as to be invisible to the human eye. Asbestos is not friable when it is embedded in ceiling tiles or pipe coverings; the potential for dangerous asbestos exposure occurs when asbestos products are broken, cut, or sanded. Asbestos dust, consisting of millions of tiny airborne fibers, floats in the air and gets into the lungs. The body responds by forming scar tissue when small asbestos fibers are inhaled. Extensive scar tissue formation is what can lead to lung cancer, asbestosis, and malignant mesothelioma.

Once inside the body, asbestos fibers can increase in size due to ferrugination, or the permeation of iron in the fiber. When an asbestos fiber lodges itself in a lung, the body's immune system tries to fight it. The body has cells called macrophages in the immune system, which exist to absorb, or eat, foreign particles or bacteria in the body. When an asbestos fiber gets into the lung, the macrophages try to absorb, or eat the fibers. But remember, asbestos fibers are slivers of crystal rock, so the macrophage is unable to destroy or absorb an asbestos fiber. The fiber continues to travel throughout the lung, causing scar tissue. The macrophage attack on the asbestos fiber also leaves iron deposits and causes the fiber to increase in size due to ferrugination, as described above.

Think about a splinter which has gotten into your finger. If you can't get the splinter out, the finger turns red. Then, scar tissue forms around the splinter because the body is trying to protect itself against the foreign object. This is similar to the disease process when tiny asbestos fibers shaped like spears get lodged in a lung.

The International Agency for Research on Cancer has documented epidemiological studies of respiratory cancer and mesothelioma in relation to exposure to asbestos, and concluded:

The studies of the carcinogenic effect of asbestos exposure...show that occupational exposure to chrysotile, amosite and anthophyllite asbestos and to mixtures containing crocidolite results in an increased risk of lung cancer... Mesotheliomas have been observed after occupational exposure to crocidolite, amosite, tremolitic material and chrysotile asbestos... Mesotheliomas have occurred in individuals living in the neighborhood of asbestos factories and mines and in people living with asbestos workers.

[For more information visit Asbestos-Mesothelioma.com.](http://Asbestos-Mesothelioma.com)

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Attorney [Tom Lamb](#) represents people in personal injury and wrongful death cases involving mesothelioma or other asbestos cancers. The above article was posted originally on his blog, **Asbestos HUB** – with active links and readers' comments.  
<http://AsbestosHUB.com>