



Minerals

Silica - Silicon dioxide

- Formula: SiO_2
- Molar mass: 60 gr/mo
- Configuration: Solid (when pure); white or colorless
- Material density: 2.2 gr/cm^3

Silica sand has been used for many years as a natural water filter in different processes.

The sand is composed of 97% or more of SiO_2 , which is a highly abrasive material.

Silica is found in nature in several forms, including quartz and opal. In fact, there are 17 different crystal forms of silica. Since silica being very hard and not affected by the weather, gets to be the most common element of sand found in inland sites and beaches in the world, (except) than in the tropics. It appears primarily in its quartz configuration. However, the composition of sand differs from place to place, depending on the rock source of the sand and the conditions that created it.

When silicon is exposed to oxygen or air, a very thin layer of silicon dioxide (of about 10 angstroms), called "natural oxide", is created on its surface. Layers of silicon dioxide can also be grown on silicon under controlled conditions in a high-temperature, oxygen-rich environment. Hydrofluoric acid (HF) corrodes silicon dioxide, and therefore this acid is used in the semiconductor industry to remove silicon dioxide or imprint patterns on it.

Uses:

- Desalination industry / water treatment filter
- Glass industry
- Adhesives and resins industry
- Building industry

