

The many forms of silica (SiO₂) II: Rocks and other aggregates

Near-Earth-surface geological materials:

Quartzose sand: sand (particles 1/16 mm to 2 mm in size) that is almost all (conventionally ≥95%) quartz.

Quartz-cemented quartz arenite: a sandstone in which the grains are almost all (conventionally ≥95%) quartz and the intergranular space (which may be as much as 35% of the rock's volume) is filled with no cementing mineral other than quartz. By contrast, a quartz arenite might consist of quartz grains but have a cement of other minerals, such as calcite.

Petrified wood: silicified ancient wood.

Nodular chert: chert found as nodules in limestone and commonly interpreted to have resulted from transport of dissolved silica by groundwater and resultant localized replacement of limestone.

Flint: a gray hard chert. This term is sometimes restricted to chert in the Chalk of England or NW Europe.

Jasper: red chalcedonic chert

Agate, onyx, and sardonyx: banded chalcedony

Silcrete: pedogenic silica, the silica analog to carbonate caliche or calcrete.

Layered chert: chert found as layers of rock and commonly interpreted as the mineralogically transformed and lithified equivalent of siliceous ooze.

Siliceous ooze: a porous sediment, typically found on the abyssal seafloor, consisting largely of the tests of organisms such as diatoms and radiolarians.

Diatomite: a sediment or weakly lithified sedimentary rock consisting largely of the tests of diatoms.

High-temperature geological materials:

Quartzolite: a quartz-rich plutonic rock.

(quartzose) **Quartzite:** a metamorphosed quartz-rich sandstone. "Quartzite" commonly refers to a metamorphosed sandstone, and because sands can have a large proportion of non-quartz grains, a quartzite might include other minerals than quartz in considerable abundance.

Vein quartz: quartz precipitated by waters, commonly of hydrothermal origin, in fractures in pre-existing rocks.

Bull quartz: white quartz, commonly vein quartz (see above) containing no ore minerals and thus of no economic value. Also known as "buck quartz".

Geyserite: A sinter of amorphous silica deposited by the fluids emitted by geysers.

Chert: a mass of equant microcrystalline silica traditionally thought to consist entirely of quartz but more recently found to include moganite as well as quartz. There are two kinds of chert with different origins: Layered chert and nodular chert.

Biological materials:

Phytoliths: small parcels of opaline silica that develop in the leaves of plants.

Sponge spicules: needle-like structures of opaline silica supporting the tissue of siliceous sponges, which are a subset of all sponges.

Tests: the mineralized (in this case with opaline silica) shells of microscopic planktic organisms such as diatoms, radiolarians, and silicaflagellates.