

Lake Superior Rocks And Minerals Rocks Minerals Identification Guides

Agate

in basaltic rocks of the Permian age in Botswana. They feature contrasting bands of purple, pink, black, grey, and white. Like Lake Superior agates, they

Agate (AG-it) is a banded variety of chalcedony. Agate stones are characterized by alternating bands of different colored chalcedony and sometimes include macroscopic quartz. They are common in nature and can be found globally in a large number of different varieties. There are some varieties of chalcedony without bands that are commonly called agate (moss agate, fire agate, etc.); however, these are more properly classified solely as varieties of chalcedony. Agates are primarily formed as nodules within volcanic rock, but they can also form in veins or in sedimentary rock. Agate has been popular as a gemstone in jewelry for thousands of years, and today it is also popular as a collector's stone. Some duller agates sold commercially are artificially dyed to enhance their color.

Talc

for various related minerals, including talc, mica, and selenite. Talc dominantly forms from the metamorphism of magnesian minerals such as serpentine

Talc, or talcum, is a clay mineral composed of hydrated magnesium silicate, with the chemical formula $\text{Mg}_3\text{Si}_4\text{O}_{10}(\text{OH})_2$. Talc in powdered form, often combined with corn starch, is used as baby powder. This mineral is used as a thickening agent and lubricant. It is an ingredient in ceramics, paints, and roofing material. It is a main ingredient in many cosmetics. It occurs as foliated to fibrous masses, and in an exceptionally rare crystal form. It has a perfect basal cleavage and an uneven flat fracture, and it is foliated with a two-dimensional platy form.

The Mohs scale of mineral hardness, based on scratch hardness comparison, defines value 1 as the hardness of talc, the softest mineral. When scraped on a streak plate, talc produces a white streak, though this indicator is of little importance...

Rhyolite

volcanic rocks on the basis of their mineral composition whenever possible, volcanic rocks are often glassy or so fine-grained that mineral identification is

Rhyolite (RY-ə-lyte) is the most silica-rich of volcanic rocks. It is generally glassy or fine-grained (aphanitic) in texture, but may be porphyritic, containing larger mineral crystals (phenocrysts) in an otherwise fine-grained groundmass. The mineral assemblage is predominantly quartz, sanidine, and plagioclase. It is the extrusive equivalent of granite.

Its high silica content makes rhyolitic magma extremely viscous. This favors explosive eruptions over effusive eruptions, so this type of magma is more often erupted as pyroclastic rock than as lava flows. Rhyolitic ash-flow tuffs are among the most voluminous of continental igneous rock formations.

Rhyolitic tuff has been used extensively for construction. Obsidian, which is rhyolitic volcanic glass, has been used for tools from prehistoric...

Hematite

Standard Works on Mineralogy. p. 23. "Kidney Ore"; "Ochre"; Industrial Minerals. Minerals Zone. Archived from the original on November 15, 2016. Retrieved December

Hematite (Fe_2O_3), also spelled as haematite, is a common iron oxide compound with the formula, Fe_2O_3 and is widely found in rocks and soils. Hematite crystals belong to the rhombohedral lattice system which is designated the alpha polymorph of Fe_2O_3 . It has the same crystal structure as corundum (Al_2O_3) and ilmenite (FeTiO_3). With this crystal structure geometry it forms a complete solid solution at temperatures above 950 °C (1,740 °F).

Hematite occurs naturally in black to steel or silver-gray, brown to reddish-brown, or red colors. It is mined as an important ore mineral of iron. It is electrically conductive. Hematite varieties include kidney ore, martite (pseudomorphs after

magnetite), iron rose and specularite (specular hematite). While these forms vary, they all have a rust-red streak. Hematite...

Diamond

the mineral calcite (CaCO_3). All three of the diamond-bearing rocks (kimberlite, lamproite and lamprophyre) lack certain minerals (melilite and kalsilite)

Diamond is a solid form of the element carbon with its atoms arranged in a crystal structure called diamond cubic. Diamond is tasteless, odourless, strong, brittle solid, colourless in pure form, a poor conductor of electricity, and insoluble in water. Another solid form of carbon known as graphite is the chemically stable form of carbon at room temperature and pressure, but diamond is metastable and converts to it at a negligible rate under those conditions. Diamond has the highest hardness and thermal conductivity of any natural material, properties that are used in major industrial applications such as cutting and polishing tools.

Because the arrangement of atoms in diamond is extremely rigid, few types of impurity can contaminate it (two exceptions are boron and nitrogen). Small numbers...

Graphite

about 12 known types of minerals that predate the Solar System and have also been detected in molecular clouds. These minerals were formed in the ejecta

Graphite (C) is a crystalline allotrope (form) of the element carbon. It consists of many stacked layers of graphene, typically in excess of hundreds of layers. Graphite occurs naturally and is the most stable form of carbon under standard conditions. Synthetic and natural graphite are consumed on a large scale (1.3 million metric tons per year in 2022) for uses in many critical industries including refractories (50%), lithium-ion batteries (18%), foundries (10%), and lubricants (5%), among others (17%). Graphite converts to diamond under extremely high pressure and temperature. Graphite's low cost, thermal and chemical inertness and characteristic conductivity of heat and electricity finds numerous applications in high energy and high temperature processes.

Water on Mars

floods, ancient river valley networks, deltas, and lakebeds; and the detection of rocks and minerals on the surface that could only have formed in liquid

Although very small amounts of liquid water may occur transiently on the surface of Mars, limited to traces of dissolved moisture from the atmosphere and thin films, large quantities of ice are present on and under the surface. Small amounts of water vapor are present in the atmosphere, and liquid water may be present under the surface. In addition, a large quantity of liquid water was likely present on the surface in the distant past. Currently, ice is mostly present in polar permafrost.

More than 5 million km³ of ice have been detected at or near the surface of Mars, enough to cover the planet to a depth of 35 meters (115 ft). Even more ice might be locked away in the deep subsurface. The chemical signature of water vapor on Mars was first unequivocally demonstrated in 1963 by spectroscopy...

Amethyst

the French poet Remy Belleau (1528–1577). Ametrine List of minerals Specimen Ridge Minerals portal One or more of the preceding sentences incorporates

Amethyst is a violet variety of quartz. The name comes from the Koine Greek ἀμέθυστος amethystos from α- a-, "not" and μεθύσκω (Ancient Greek) methysko / μεθύ metho (Modern Greek), "intoxicate", a reference to the belief that the stone protected its owner from drunkenness. Ancient Greeks wore amethyst and carved drinking vessels from it in the belief that it would prevent intoxication.

Amethyst, a semiprecious stone, is often used in jewelry.

It occurs mostly in association with calcite, quartz, smoky quartz, hematite, pyrite, fluorite, goethite, agate and chalcedony.

Copper

impart blue or green colors to such minerals as azurite, malachite, and turquoise, and have been used widely and historically as pigments. Copper used

Copper is a chemical element; it has symbol Cu (from Latin cuprum) and atomic number 29. It is a soft, malleable, and ductile

metal with very high thermal and electrical conductivity. A freshly exposed surface of pure copper has a pinkish-orange color. Copper is used as a conductor of heat and electricity, as a building material, and as a constituent of various metal alloys, such as sterling silver used in jewelry, cupronickel used to make marine hardware and coins, and constantan used in strain gauges and thermocouples for temperature measurement.

Copper is one of the few metals that can occur in nature in a directly usable, unalloyed metallic form. This means that copper is a native metal. This led to very early human use in several regions, from c. 8000 BC. Thousands of years later, it was...

Geological history of North America

from this age were preserved between Copper Harbor and Eagle Harbor on the shoreline of Lake Superior in the Upper Peninsula of Michigan. The appearance

The geological history of North America comprises the history of geological occurrences and emergence of life in North America during the interval of time spanning from the formation of the Earth through to the emergence of humanity and the start of prehistory. At the start of the Paleozoic Era, what is now "North" America was actually in the Southern Hemisphere. Marine life flourished in the country's many seas, although terrestrial life had not yet evolved. During the latter part of the Paleozoic, seas were largely replaced by swamps home to amphibians and early reptiles. When the continents had assembled into Pangaea, drier conditions prevailed. The evolutionary precursors to mammals dominated the country until a mass extinction event ended their reign.

The Triassic, the first period of...

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