

Amethyst – The February Birthstone

Background

Amethyst is the purple variety of quartz and is one of the most popular gems. Up to the 18th century, amethyst was included in the cardinal, or most valuable, gemstones (along with diamond, sapphire, ruby, and emerald). However, since the discovery of extensive deposits worldwide, it has lost most of its value. The name comes from the Ancient Greek *a-* ("not") and *μέθυστος* *methustos* ("intoxicated"), a reference to the belief that the stone protected its owner from drunkenness. The ancient Greeks and Romans wore amethyst and made drinking vessels of it in the belief that it would prevent intoxication. The "color of amethyst" has become a coined phrase. Many things are said to be of an amethyst color, even other more expensive purple gemstones.

Composition, Chemical Formula, Colors and Sources

Composition – silicon dioxide

Chemical Formula – SiO₂

Colors – can display a range of shades including deep purple, light lilac, lavender and mauve. Top quality amethyst is a deep medium purple with rose-colored flashes. The color is caused by iron impurities in the 10s to 100s parts per million range.

Sources – different localities can produce an amethyst unique to that particular region or to that particular mine.

- **Vera Cruz, Mexico** – very pale, clear, prismatic crystals that are sometimes double terminated and have grown on a light colored host rock. Crystals are typically phantom.
- **Guerrero, Mexico** – deep purple, prismatic crystals that radiate outward from a common attachment point. Often the crystals are phantom opposite of Vera Cruz amethyst, having a purple interior with a clear or white quartz exterior. These are some of the most valuable amethysts in the world.
- **Minas Gerais and Rio Grande do Sul, Bahia, Brazil** – crystals form in drusy crusts that line the inside of volcanic rock pockets (vugs) called geodes. Some vugs form from trees that were engulfed in a lava or volcanic ash flow millions of years ago and have since withered away. Other vugs are just gas bubbles in the lava. Crystals are usually light to medium in color and only colored at the tops of the crystals. Most clusters form with gray, white and blue agate and have a green exterior on the geodes.
- **Maraba, Brazil** – large crystals with unattractive surfaces that are of a pale to medium color.
- **Thunder Bay, Canada** – a distinct red hematite inclusion just below the surface of the crystals is unique to this locality. Clusters are drusy crusts that line the fissures formed in ancient metamorphic rocks.
- **Uruguay** – crystals are dark to medium and form in drusy crusts that line the inside of volcanic vugs that have a gray or brown exterior. The crystals are *usually* colored throughout, unlike the Brazilian crystals, and form with a multicolored agate that often contains reds, yellows and oranges.
- **Africa** – crystals are usually large, but not attractive. However, the interior color and clarity are excellent and polished slices and carvings, as well as many gemstones, are prized and admired.
- **Maine, USA** – dark drusy clusters that are not widely distributed today.
- **North Carolina, USA** – drusy clusters that have a bluish-violet tint.
- **Pennsylvania, USA** – drusy clusters that filled fractures in metamorphic rocks. They are generally a brownish purple and patchy in color.
- **Colorado, USA** – drusy clusters form crusts inside of fissures in sandstone, often on top of a crust of green fluorite. Crystals are dark, but rather small.
- **Italy** – Vera Cruz-like crystals with large parallel growth clusters with good evenly distributed color.
- **Germany** – associated with colorful agates that form a drusy light-colored crust.
- **Ural Mountains, Russia** – a very clear and dark variety that is cut for fine expensive gemstones, natural uncut clusters are rarely on the market.

Note: Amethyst can lighten if exposed to strong sunlight for a long time. When heated to 550-560 Centigrade, the color changes to dark yellow or reddish brown. Often, cut gems of amethyst are graded using the terms: Siberian, Uruguayan or Bahain. This represents high, medium and low grade, respectively, regardless of the actual source. For example a Mexican amethyst may be labeled as Siberian, depending on the quality.

Identification

Streak – white

Hardness – 7

Crystal System – hexagonal

Crystal Forms and Aggregates – most often as protruding clusters of pyramids on a matrix base. These "pyramids" can be quite large. Also occurs as tall prismatic crystals, as short stubby crystals, in drusy aggregates, massive, in geodes, and as rounded waterworn stones. A very interesting habit is as crystalline crusts inside volcanic pipes. Crystals are usually striated horizontally, and occasionally have a scepter growth.

Transparency – transparent to translucent

Specific Gravity – 2.6 - 2.7

Luster – vitreous

Cleavage – indiscernible

Fracture – conchoidal

Tenacity – brittle

Other ID Marks – occasionally fluorescent cream or white in shortwave ultraviolet light.

Complex Tests – dissolves in hydrofluoric acid.

In Group – silicates; Tectosilicates; Silica Group

Environment – occurs in all mineral environments, especially in igneous environments.

Uses – Amethyst is a widely used gem. Most amethyst is faceted or cut into cabochons for jewelry. Large chunks of amethyst are carved. Amethyst is also popular among mineral collectors.

Folklore, Legend and Healing Properties

Amethyst gems have been used as healing stones for centuries. It is a calming stone, said to bring peaceful sleep, ease headaches and reduce stress. Helps heal arthritis and disorders of the ear, bones, eyes, scalp, hair, pituitary and pineal glands. Said to aid sobriety. Additionally, amethyst is associated with increased nobility, spiritual awareness, meditation, balance, psychic abilities, and positive transformation. *Keep in pet's water to reduce fleas.*

Quartz is usually quite harmless unless broken or powdered. Broken crystals and masses may have razor-sharp edges that can easily cut skin and flesh. Handle with care. Do not grind dry since long-term exposure to finely ground powder may lead to silicosis.

Trivia

Amethyst is suggested as a gem to give on the 4th, 6th and 17th wedding anniversaries.

In the Bible, an amethyst is worn on the breastplate of Aaron, the high priest of the Hebrews.

In 1993, a nine-foot cavern was found in Maine containing more than a ton of amethyst crystals.

Because amethyst was thought to encourage celibacy and symbolize piety, it was very important in the ornamentation of Catholic and other churches in the Middle Ages. Amethyst was, in particular, considered to be the stone of bishops and some still wear amethyst rings.

Some fine amethysts are featured in the British Crown Jewels, and have been a favorite with such diverse figures as Egyptian royalty to Catherine the Great, who sent thousands of workers to the Uralian mines to search for the best quality, thus creating the "Siberian" grade.

Sources:

<http://en.wikipedia.org/wiki/Amethyst>

<http://www.galleries.com/minerals/gemstone/amethyst/amethyst.htm>

<http://www.mindat.org/min-198.html>

<http://www.3dchem.com/molecules.asp?ID=184>

<http://www.bernardine.com/gemstones/amethyst.htm>

<http://www.minerals.net/Mineral/amethyst.aspx>

http://www.ehow.com/facts_5503321_amethyst-crystal-kids.html

http://www.ehow.com/facts_5157493_amethyst.html

<http://fishingcanada.ws/artists/amethyst/facts.html>

<http://www.encyclopedia.com/topic/amethyst.aspx>

http://www.gemsbrokers.org/gemstone/gems_and_gemology/amethyst_myths.htm

<http://tex.in/b/tj/2009/01/amethyst-facts-about-amethyst.html>

http://www.minerals-n-more.com/Amethyst_Info.html