

AGATE INFORMATION

CHEMISTRY SiO₂

CRYSTALLOGRAPHY Hexagonal, microcrystalline.

REFRACTIVE INDEX 1.544 - 1.553

HARDNESS 7

SPECIFIC GRAVITY 2.651

CLEAVAGE None

HEAT SENSITIVE No

WEARABILITY* Excellent

SPECIAL CARE INSTRUCTIONS None

ENHANCEMENTS May be dyed.

Technically, chalcedony (kal SED' uh nee) is any form of microcrystalline or cryptocrystalline quartz, (meaning any form of quartz whose crystals are too small to be seen without high magnification.) In common practice, only the translucent, single colour types are sold as "chalcedony" whereas the rest of this group are sold under individual variety names, or as jasper or agate. While the definitions overlap, jasper usually refers to an opaque, solid coloured stone. Agate is defined either by its translucency, or by having a pattern to its colours.

Agate

Agate is distinguished by having multiple colours. While not usually as rich as our crystalline gems, the colours can be quite vivid. Agates are sometimes opaque, but they are frequently translucent, and occasionally completely transparent.

Banded Agates

Banded agates are some of the most popular. They are found all around the world, with Brazil being one of the most productive sources. Note that many of the richly coloured, banded agates you see for sale are dyed.

Lace Agate

Lace agate is noted for its delicate designs. Mexico is one of the premier sources for this material.

Dendritic, Moss and Plume Agates

These agates have in common that they contain mineral inclusions which may be any colour, but share a roughly tree-like or branching form (dendron = tree). Those which have a more plant or feather-like appearance have been called moss or plume agates, respectively. All agates take a wonderful polish and are tough enough for most jewelry uses. Designers often take advantage of the intriguing patterns these stones have to offer.

Picture Stones

Some of the most treasured gems are those that show a picture that appears to be taken from nature. Oregon's Biggs Jasper is now the most common source. Bruneau Jasper, from Bruneau Canyon, Idaho, used to be the preferred material. Gems from this locality frequently had blue "skies" which the Oregon material lacks. Unfortunately, a dam has submerged the mining site and the material is now quite rare.

Jasper

Jasper is an opaque, solid or patterned variety of cryptocrystalline quartz which consists of very tiny quartz crystals coloured by various mineral impurities. The names of various jaspers can come from their colour: bloodstone, green, lemon; from their pattern: orbicular, poppy, leopardskin, landscape, Picasso; or from a place name: Morrisonite, Mookite.

All types take an excellent polish, are trouble free to care for, and hardy enough for all jewelry uses. These stones are usually cabbed, sometimes carved, and seldom faceted.

Jewelry use of jaspers goes back into the early history of civilization. Various forms of this material are also frequently made into decorative objects, such as ashtrays or bookends. Jaspers are found all over the world, with certain colours or patterns unique to particular locales. Most bloodstone comes from India, all Mookaite from Australia.

Tigers Eye

Crocidolite, (blue asbestos,) alters to quartz, but while retaining its fibrous structure. This material is frequently stained by iron, giving it a golden brown colour. We know this material as tigers eye. Unstained pieces, retaining their original blue colour, are called Hawks Eye. There are also pieces with both colours.

Carnelian

The best-known and generally least expensive variety in this group is carnelian. It ranges in colour from yellow-orange to rich, near reddish orange, to orangey brown, and varies from semi-opaque to highly translucent. Carnelian is the only type of chalcedony which is regularly enhanced. Iron is the source of its colour and as a result it can be easily heat treated, (even by the sun's heat alone,) to darken red tones as the iron is oxidized. You should assume, unless informed otherwise, that any piece of carnelian has been enhanced in this way. Most commercial carnelian comes from India, but it is mined world wide.

Chrysoprase

Apple green chalcedony that derives its colour from nickel is chrysoprase. Ranging from nearly opaque to nearly transparent, its colour spectrum includes olivey, to nearly pure greens of medium tone. Very fine, highly saturated pieces have been successfully misrepresented as Imperial jade. Most chrysoprase sold today comes from Australia. Prase is a darker, less saturated form, rarely seen, which comes from Eastern Europe. There are also very small amounts of a green chalcedony coloured by chromium found in Africa, called Mtorolite.

The information contained in these FREE sheets has been gathered from many different sources. While the information contained here is offered freely, this information should only be used for general information.
*Sources.

Barrie & Jackie Wakeford (CrystalConnection) 2009. (Pictures and some text)
The International Gem Society. (Mainly text and characteristics of stones)