



Gemkids[®] JOURNAL

Volume 5

Fire Agate (ag-it)

Fire agate is part of the gem species chalcedony, which is a type of quartz.



GIA[®]

Words to Know

Iridescence (ear-i-des-ents): A phenomenon, or visual effect, in which light reflects off microscopic layers of material, causing a rainbow of colors, similar to a soap bubble.

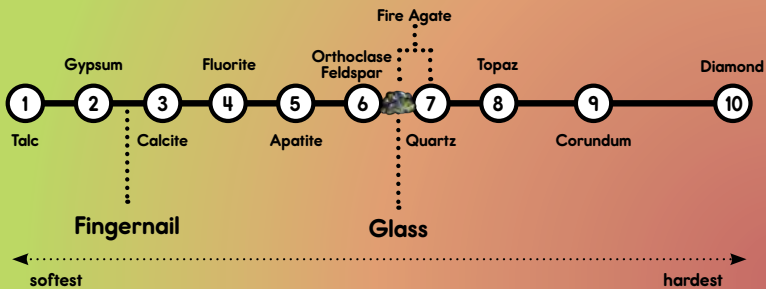
Botryoidal (bot-ree-oy-del): A mineral habit in which tiny crystals form round blobs similar to clusters of grapes.



Digging Deeper: Mohs Scale

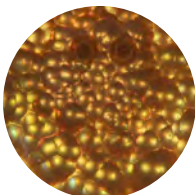
About 200 years ago, German mineralogist Fredrich Mohs created a scale to show the hardness of minerals. The scale ranges from 1 to 10, with number 1, talc, being the softest mineral. It increases to the hardest mineral, diamond, at number 10.

Hardness is a mineral's resistance to scratching. A mineral with a higher hardness can scratch all the minerals with a lower hardness. However, a mineral with a lower hardness cannot scratch a mineral with a higher hardness. Most gems have a hardness of 7 or higher. However, fire agate ranges from 6.5 to 7 out of 10 on the Mohs hardness scale.

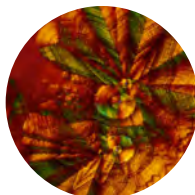


A Look Inside Fire Agate

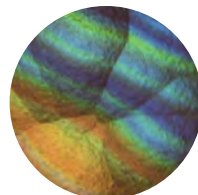
Photomicrograph: A zoomed-in picture of a gemstone taken using a very powerful microscope.



Fire agate displaying a botryoidal habit.

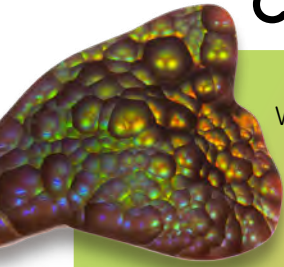


Internal structure of fire agate.



Layers of iridescence showing a spectrum of colors.

Colors of Fire Agate



While fire agate's bodycolor is sometimes hard to identify due to its iridescence, specimens typically range from golden brown to reddish brown.

Fire agate can display iridescence of nearly every color; red, orange, and green are more common, while blue and violet are rare.

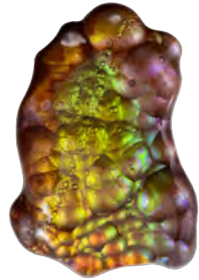
Fire agate is iridescent because it contains an ultra-thin coating of the mineral goethite between layers of chalcedony.

Gemstone cutters carve or cut fire agate in order to enhance its iridescence.

Did You Know?

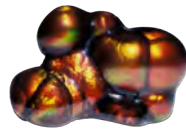
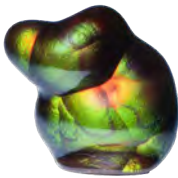
Fire agate was first discovered in the 1940s in Arizona and California, and it has since been found in Mexico and New Mexico. It is unique to the American Southwest and Mexico.

Fire agate forms in cracks of volcanic rock called rhyolite.



Funky Fire Agates

Each fire agate gem is one of a kind because no two have exactly the same botryoidal shapes and layers.



True or False?



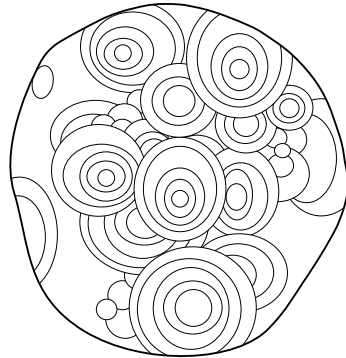
- 1. Fire agate is found in Africa.
- 2. Fire agate was discovered in the 1940s.
- 3. Fire agate is a type of opal.

Where Is Fire Agate Found?



Color Me

Use colored pencils to make this fire agate shimmer.



Answer Key

True or False?

1. False, 2. True, 3. False

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