

# Where in the World Is Calcium Carbonate?

The major component of all limestone is calcium carbonate, or  $\text{CaCO}_3$ . Calcium carbonate is the chemical name for the mineral calcite. Calcite, along with two related minerals, aragonite and dolomite, make up an estimated 15% of Earth's sediments and sedimentary rocks, and about 2% of Earth's crust. Calcium carbonate is the main ingredient in the rock's marble, marl, chalk, travertine, and tufa, and is present in some ore-bearing veins. It is also the main mineral ingredient in the shells of invertebrate organisms.

Calcite is a carbonate mineral; that is, it contains a specific combination of the elements carbon (C) and oxygen (O), in the chemical form  $\text{CO}_3$ . Other carbonate minerals include dolomite, rhodochrosite,

magnesite, aragonite, and siderite. Carbonate minerals are easy to identify because they all break down in acid. Calcite is the only common mineral that fizzes and releases carbon dioxide ( $\text{CO}_2$ ) in dilute, cool hydrochloric acid. Most geologists carry a small bottle of hydrochloric acid to help them identify calcite when they are doing fieldwork.

A crystal of pure calcite is colorless. On occasion, however, calcite has other colors—red, pink, yellow, green, blue, lavender, black, or brown. The color depends on the kinds of impurities the specimen contains. Calcite may be transparent, translucent, or opaque, and often has a glassy luster. It can be scratched by a knife, but not by a fingernail. Some calcite specimens glow or fluoresce under ultraviolet (black) light. A

form called Iceland spar exhibits double refraction. If you look at some text through a piece of Iceland spar, you will see a double image.

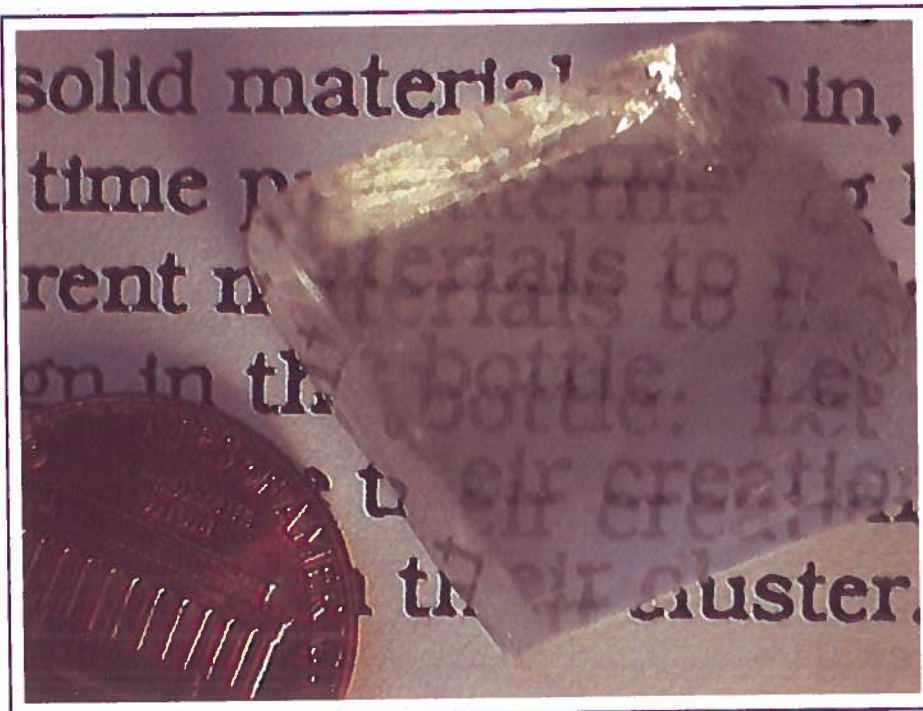


Image seen through  
Iceland spar