MINERAL TEST KIT
RM-TESTKIT

INTRODUCTION

There are over 2000 different mineral species composed of chemical elements or compounds. Minerals can be identified by testing their properties and through careful observation. Many rock and mineral specimens are actually composed of a mixture of mineral species.

Be sure to test and identify each mineral in a specimen composed of two or more species. Once you have tested a mineral specimen you can identify it by comparing your test results with the mineral characteristics as given in a good rock and mineral field guide.

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5/10X Magnifier
Ceramic Plate (for streak and hardness test)
Glass Plate (for hardness test)
Acid Bottle (for fizz test)
Magnet (for magnetic test)

MINERAL HARDNESS

Hardness is the ability to scratch another mineral or material. The Mohs scale of hardness consists of 10 minerals varying in hardness from 1 through 10, with talc (1) the softest and diamond (10) the hardest:

1	Talc	6	Feldspar
2	Gypsum	7	Quartz
3	Calcite	8	Topaz
4	Fluorite	9	Corundum
5	Apatite	10	Diamond

The hardness of a mineral specimen can be determined by scratching it against the above minerals. If a specimen scratches calcite (3) but is scratched by fluorite (4), then its hardness is between 3 and 4. You can also use common materials to test hardness if you don't have samples of the minerals that make up Mohs scale. The hardnesses of some materials in this kit and some other items are as follows:

2.5 Fingernail
3.5 Copper penny
5.5 Glass plate or nail
6.5 Ceramic plate

THE STREAK OF A MINERAL

A streak is the color of a mineral in powder form. It is determined by rubbing a specimen across a ceramic plate. The streak is an important identifying characteristic, especially of metallic minerals. The streak of some minerals is similar to the mineral color in lump form. In other minerals that streak is very different from the mineral color. Minerals with a hardness above 6.5 have a colorless streak because they are too hard to leave a streak on the plate. Wash your ceramic plate with soap and water as necessary to clean it.

MAGNETISM

Magnetism can be strong, weak or non-existent in minerals. Test magnetism with a magnet. The specimen is non-magnetic if it is not at all attracted to a magnet. It is weakly magnetic if it has a slight attraction to a magnet and strongly magnetic if it has a strong attraction to a magnet.

ACID REACTION

Some minerals are carbonate compounds that dissolve rapidly in acid, producing bubbles or "fizz." Test a specimen for this property by placing a drop or two of dilute hydrochloric acid on it. It will produce tiny bubbles if it is composed of carbonate. Dilute 1 part concentrated hydrochloric acid with 3 parts water to make dilute hydrochloric acid. Vinegar will also work, although not as well with some minerals.

SPECIFIC GRAVITY

Specific gravity is the weight of a mineral compared to the weight of an equal volume of water. Determine specific gravity by first weighing a mineral specimen to the nearest 0.1 gram (g) using a sensitive balance. Then measure the water volume the specimen displaces when dropped in a graduated cylinder 1/2 full of water. Record the volume to the nearest milliliter (ml) or fraction of a ml. Since the density of water is 1 gram per milliliter (1 g/ml) at room temperature, specific gravity is calculated by dividing the mineral weight by the displaced volume.