Granite countertops

Webster's Definition for "granite" gran.ite \'gran-*t\ \gra-'nit-ik\ \'gran-*t-.o.id\ n [It granito, fr. pp. of granire to granulate, fr. grano grain], fr. L granum 1: a very hard natural igneous rock formation of visibly crystalline texture formed essentially of quartz and orthoclase or microcline and used for building and for monuments 2: unyielding firmness or endurance - gra.nit.ic adj more technical definition

But if a picture is worth a 1000 words, what's this new clickable map worth?

Click on some of the grains above to find out what minerals they are. Not all grains are marked, so it's best to try larger grains. There are 4 different prominent minerals in this granite.

Since so many people ask me about "weight" [granite not mine]....I have an old reference that says an "average" granite has a density of about 166.5 lb. per cubic foot, or about 2.6 times what the same volume of water would weigh. If its what commercial stone dealers call a "black granite" the density would likely be much higher. A standard reference notes that the average density of granite is 2.667 grams/cc and the range of densities is 2.516-2.809 grams/cc.

The excellent Glossary of Geology (3rd edition) by Bates and Jackson is a bit more technical (italicized stuff added by Rob).

granite [petrology] (a) In the IUGS classification a plutonic rock with Q (quartz) between 20 and 60 (%) P/A+P (P is plagioclase feldspar and A is alkali feldspar) between 10 and 65. (b) A plutonic rock in which quartz constitutes 10 to 50% of the felsic components and in which the alkali feldspar/total feldspar ratio is generally restricted to the range of 65 to 90 percent. Rocks in this range of composition are scarce, and sentiment has been growing to expand the definition to include rocks designated as adamellite or quartz monzonite (rocks with more plagioclase) which are abundant in the U.S. (c) Broadly applied (as it shouldn't be), any holocrystalline (totally crystals no glass) quartz-bearing plutonic rock.

I like the (a) definition. It sounds complicated as it's written, but graphically, it's easier to show on a triangular (ternary) graph.

On the "You are here" figure above, the red area is the granite area. The diagram shows graphically the normalized percentages of the three major minerals found in a rock that is called a granite.

The Glossary of Geology also covers a dark and ugly misuse of the term "granite" by certain nonscientific types.

commercial granite A general term for a decorative building stone that is hard and crystalline.

Wikipedia has a discussion of granite as well.

An excellent discussion of terms including more about that commercial granite stuff.

If you aren't happy with my definition you can check out Jill's discussion of granite.

Also in depth definitions (v. large file) of several igneous rock types from the Geological Survey of Canada.

Average Chemical Composition of Granite (from Handbook of Physical Constants)

Oxide Weight % SiO_2 70.18 TiO_2 0.39 Al_2O_3 14.47 Fe_2O_3 1.57 FeO 1.78 MnO 0.12 MgO 0.88 CaO 1.99 Na_2O 3.48 K_2O 4.11 H_2O+ 0.84 H_2O- 0.03 P_2O_5 0.19

Thermal expansion of granites and rhyolites in the range of 20-100 C = 8±3 X10-6 (change in length/change in T)

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china granite,granite countertops,granite slabs,granite tiles,vanity tops,Paving Stone,Sculpture,granite

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