

# Is Milky Quartz Amorphous?

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We think of quartz as crystal quartz or else a bunch of “stuff” we presume is non-crystallographic, that is, amorphous. Is this true? If we look at massive milky quartz, what kind of infrared spectrum do we get?

First, we have to step back to understand that there are 5 and no other infrared spectral graphs for quartz. Infrared spectroscopy does not respond to compositional groups as organic chemicals in infrared does. Reflectance infrared for minerals responds to compositions overlain by crystallographic behaviors, dominantly refractive index effects, but also crystal lattice structure. For example, isometric crystals such as garnets have one and only one infrared graph regardless of crystal face.

How do you identify manmade quartz? It has defect blends of these 5 spectra. Any silicate including the silica (quartz related) groups generate one spectrum with the laser aimed perpendicular the crystallographic axis, another parallel to it, and then blends of faces inbetween (2 sets of crystal end faces for quartz). Any random cut in quartz is another graph.

When you see infrared spectra of quartz bands drifting about or authors complaining about it, just understand when that stupid idiot claimed years ago with no proof in science at all that bashing a mineral specimen into a powder makes a spectral graph in transmission infrared based only on composition because he said he made an amorphous powder (aka organic compound IR response), what you actually are doing is not making an amorphous graph, but a random crystallite blend of crystal faces, that depending on their ratio interacting with the laser, the infrared spectra blend between these five face graph types. Since you don't control the face ratio blend, you don't control the spectral outcome either.

From all that, let us take a look at Johannesburg, CA milky quartz. This sits on the Garlock fault, as a major gold trend, so are dykes of deep intrusion mineralization. What we see is that if we compare this quartz mass to s-face quartz, it is an exact match to that reference spectrum. Milky quartz is crystallographic as dominantly s- and m-face quartz. Now go look that up in your geology science. Tick, tock, your time is up, and the answer is no, our so-called modern science does not know this. How so? Most mineralogical infrared is powder specimen transmission infrared that destroys the crystallographic features of spectra, and actually, they do it on purpose with the dogmatic belief they can eliminate these effects and get at the mineral amorphous composition. Unfortunately, simple and quick study shows that this does not occur.

Johannesburg, CA Garlock fault milky quartz compared to quartz crystal s-face spectrum. Milky quartz are crystallite crystal hashes, dominantly s-face, but also sometimes m-face dominant.

