

Point count parameters and calculated parameters used for the point-count analysis of sands and sherds from the Phoenix and Gila Basins.

Parameter	Description
Totals and <i>sherd-specific</i> parameters	
Total	The total number of point-counted sand-sized grains, including crushed rock, clay lumps, fiber temper, or grog.
Voids	The total number of open voids encountered in the paste, exclusive of voids with definitive fiber remnants or outline shapes. All voids were counted under this parameter unless they showed definitive "fiber void" characteristics.
Paste	The total number of points counted in the silt-to-clay-sized fraction of the paste.
Paste Percent	The proportion of points in the silt-to-clay-sized fraction of the paste. $(\text{Paste}/(\text{Paste} + \text{Total Temper})) * 100$
Grog	Sherd temper: Dark, semiopaque angular to subround grains with discrete margins, including silt- to sand-sized temper grains in a clay matrix with or without iron oxides and/or micas. The grains differ in color and/or texture from the surrounding matrix of the "host" ceramic. This parameter is counted only in sherd samples.
Clay Lump	Discrete "lumps," or grains, of untempered clay. These are generally in the sand-sized range. They comprise clay that lacks silt-to-sand-sized grains. Often these grains are similar in color to the surrounding paste, but they have well-defined abrupt boundaries. Their internal texture is finer than the paste, and has a different orientation. They are assumed to be clay that was insufficiently mixed with the surrounding clay body.
Sand Total	The total number of point-counted <i>sand</i> grains; i.e., Total Temper <i>minus</i> clay lumps, fiber temper, and grog.
Monomineralic Grains	
Qtz	All sand-sized quartz grains except those derived from or contained within coarse foliated rocks ¹ . Unstained.
Kspar	Alkali feldspars, except those derived from or contained within coarse foliated rocks. Potassium feldspar stained yellow, unstained plagioclase feldspar, perthite, antiperthite.
Micr	Microcline/anorthoclase: Alkali feldspar with polysynthetic (cross-hatch) twinning, stained yellow or unstained.
Sanid	Sanidine. Volcanic alkali feldspar.
P	Plagioclase feldspar, stained pink, except for grains derived from or contained within coarse foliated rocks. Grains commonly have albite twinning and/or carlsbad twinning. Several different methods of separating plagioclase were tried on different projects over the past decade. They are not all comparable with one another, so only total plagioclase is reported.
Musc	Muscovite mica.
Biot	Biotite mica.
Chlor	Chlorite group minerals
Px	Undifferentiated members of the pyroxene group.
Amph	Undifferentiated members of the amphibole group.
Oliv	Olivine
Opaq	Undifferentiated opaque minerals such as magnetite/ilmenite, rutile, and iron oxides.
Epid	Undifferentiated members of the epidote family (epidote, zoisite, clinozoisite).
Sphene	Sphene.
Gar	Undifferentiated members of the garnet group.
Monomineralic Grains in Coarse Foliated Rocks¹	
Sqtz	All quartz derived from or contained within coarse foliated rocks.
Skspars	Potassium feldspar derived from or contained within coarse foliated rocks.
Splags	Plagioclase feldspar derived from or contained within coarse foliated rocks.
Smusc	Muscovite mica derived from or contained within coarse foliated rocks.
Sbiot	Biotite mica derived from or contained within coarse foliated rocks.
Schlor	Undifferentiated chlorite group minerals derived from or contained within coarse foliated rocks.
Sopaqs	Undifferentiated opaque minerals derived from or contained within coarse foliated rocks.

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Metamorphic Lithic Fragments	
Lmvf	Metamorphosed volcanic rock such as rhyolite. Massive to foliated aggregates of quartz and feldspar grains with relict phenocrysts of feldspar.
Lmss	Metamorphosed sedimentary rock, such as a meta-siltstone. Massive fine-grained aggregates of quartz and feldspar with or without relict sedimentary texture.
Lmamp	Amphibolite: A high grade metamorphic rock made up largely of amphibole.
Lma	Quartz-feldspar (mica) aggregate: Quartz, feldspars, mica, and opaque oxides in aggregates with highly sutured grain boundaries but no planar-oriented fabric; some are schists or gneisses viewed on edge, some are metasediments or metavolcanics.
Lmt	Quartz-feldspar-mica tectonite (schists or gneisses): Quartz, feldspars, micas, and opaque oxides with strong planar oriented fabric. Often display mineral segregation with alternating quartz-felsic and mica ribbons. Grains are often extremely sutured and/or elongated.
Lmtp	Phyllite: Like LMT but the grains are silt-sized or smaller, with little or no mineral segregation. Also argillaceous grains which exhibit growth of planar-oriented micas, silt-sized or smaller.
Lmm	Microgranular quartz aggregate: Non-oriented polygonal aggregates of newly-grown strain-free quartz crystallites with sutured, planar, or curved grain boundaries.
Lmf	Foliated quartz aggregate: Planar-oriented fabric developed in mostly strained quartz crystals with sutured crystallite boundaries. Quartzite.
Volcanic Lithic Fragments	
Lvf	Felsic volcanic such as rhyolite: Microgranular nonfelted mosaics of submicroscopic quartz and feldspars, often with microphenocrysts of feldspar, quartz or rarely ferromagnesian minerals. Groundmass is fine to glassy, always has well developed potassium feldspar (yellow) stain, may have plagioclase (pink) stain too.
Lvfb	Biotite-bearing felsic volcanic: Microgranular nonfelted mosaics of submicroscopic quartz and feldspars, often with microphenocrysts of feldspar, quartz, always with phenocrysts of biotite. Groundmass is fine to glassy, always has well developed potassium feldspar (yellow) stain.
Lvi	Intermediate volcanic rock such as rhyodacite, dacite, latite, and andesite.
Lvm	Basic volcanic: Visible microlites or laths of feldspar crystals in random to parallel fabric, usually with glassy or devitrified or otherwise altered dark groundmass. Often with phenocrysts of opaque oxides, occasional quartz, olivine, or pyroxene. Rarely yellow stained, often very well developed pink stain, representing intermediate to basic lavas such as latite, andesite, quartz-andesite, basalt, or trachyte.
Lvv	Glassy volcanics: Vitrophyric grains showing relict shards, pumiceous fabric, welding, or perlitic structures, sometimes with microphenocrysts, representing pyroclastic or glassy volcanic rocks.
Lvh	Hypabyssal volcanics (shallow igneous intrusive rocks): Equigranular anhedral to subhedral feldspar-rich rocks with no glassy or devitrified groundmass, coarser-grained than LVF, most have yellow and pink stain.
Sedimentary Lithic Fragments	
Lss	Siltstones: Granular aggregates of equant subangular to rounded silt-sized grains with or without interstitial cement. May be well to poorly sorted, with or without sand-sized grains. Composition varies from quartzose to lithic-arkosic, with some mafic-rich varieties.
Lsa	Argillaceous: Dark, semiopaque, extremely fine grained without visible foliation, may have mass extinction, variable amounts of silt-sized inclusions, representing shales, slates, and mudstones.
Lsch	Chert: Microcrystalline aggregates of pure silica.
Lsca	Carbonate: Mosaics of very fine calcite crystals with or without interstitial clay- to sand-sized grains. Most appear to be fragments of soil carbonate (caliche) and are subround to very round.
Lsca1	Counted only in sherds: Primary caliche, cohesive and with well-defined boundaries, such as that which could have come directly out of a sand or primary sedimentary deposit.
Lsca2	Counted only in sherds: Caliche which cannot be definitely identified as primary (Lsca1) or secondary (Lsca2). It may have well-defined boundaries along one edge or be diffuse along others. Some may represent calcium carbonate that was in the clay rather than a temper addition.

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<i>Lsca3</i>	Counted only in sherds: Secondary caliche, often seen as coatings on the walls of voids, or as deposits in cracks. It appears to have been deposited within the vessel only after firing. Secondary caliche could result from factors inherent in the use of the vessel (i.e., a water jug) or from post-depositional processes.
Caco	Sand-sized calcium carbonate minerals. Technically, these should be listed with the monocrystalline grains, but they most often co-occur with caliche or other sedimentary rocks.
Unknown and Indeterminate Grains	
Unkn	Grains that cannot be identified, grains that are indeterminate, and grains such as zircon and tourmaline that occur in extremely low percentages.
Calculated parameters used in the statistical models	
Tqtz	Qtz + Sqtz
Tkspar	Kspar+Tkspars
Tplag	Plag+Plagal+Plaggn+Splag
Tmusc	Musc + Smusc
Tbiot	Biot+Sbiot
Tchlor	Chlor+Schlor
Tbiotchl	Biot + Sbiot + Chlor + Schlor
Pyr	Pyx + Amph
Topaq	Opaq + Sopaq
Lma2	Lmamph+Lmss+Lmvf+Lm
Lmmf	Lmm + Lmf
Lma2mf	Lma2+Lmmf
Lmttp	Lmt + Lmtp
Lm	Lmm + Lmf + Lma + Lmamph + Lmss + Lmvf + Lmt + Lmtq
Lvf2	Lvfb + lvf
Lvm2	Lvi + Lvm
Lv	Lvfb + Lvfb + Lvi + Lvm + Lvh + Lv
Lscaco	Lsca + Caco
¹ As used here, "Coarse foliated rocks" includes gneiss and schist, but not phyllite.	