IGNEOUS TEXTURES

Crystallinity

Hypocrystalline = composed partly of crystals and partly of glass

Grain size

Fine-grained = <1 mm

Medium-grained = 1-5 mm

Coarse-grained = >5 mm

Aphanatic or microcrystalline = minerals not visible to the naked eye

Phaneritic = minerals can be distinguished with the naked eye

Shapes

Euhedral = crystals entirely bounded by crystal faces

Subhedral = minerals partly bounded by crystal faces

Anhedral = no crystal faces shown

Irregular = ragged patches, wisps etc

Tabular or lath shaped = flat rectangular crystals

Prismatic = elongated rectangular crystals

Mutual arrangement of crystals

Porphyritic = large phenocrysts enclosed in a fine-grained matrix

Glomeroporphyritic = phenocrysts grouped in clusters

Groundmass textures

Intersertal = interstices filled with glass or secondary minerals eg chlorite, zeolites, calcite

Trachytic or pilotaxitic = feldspars oriented in a subparalell manner as a result of flow

Felted = groundmass feldspars interwoven in an irregular fashion

Other textural terms

Flow banded = minerals aligned as a result of flowage of lava

Amygdaloidal/amygdales = vesicles infilled with secondary minerals eg quartz and calcite

Poikilitic = numerous tiny grains enclosed in a larger crystal of another mineral

Resorption = crystal is starting to become dissolved around the edges

Embayments = has become unstable (olivine), not in equilibrium in the liquid

Zoning = moving up and down in the plumbing, different crystals in different temperatures

Pseudomorph = a crystal that preserve the shape of a pre-existing mineral

Disseminated = spread over a large area

Interstitial/interstice = empty space between matter

Alteration textures

Replacement textures (existing minerals become unstable and are replaced):

1) *Pervasive* = extensive alteration that has completely changed the rock composition and textures at scales from mm to km
2) *Selective* = original rock texture is just slightly modified as only certain minerals are preferentially replaced
3) *Vein halo* = replacement in restricted areas, such as halos around veins, intrusion contacts or stratigraphic contacts

Infill textures (precipitation of minerals from solution):

1) *Incomplete infill* = partial infilling
2) *Massive infill* = results from continuous deposition of minerals until cavity is filled
3) *Layered infill* = deposition of a succession of minerals inwards from the cavity, do not generally contain well-formed crystals but rather thin layers of individual minerals

Dissolution textures (form from corrosion or leaching existing minerals with or without minor replacement by new minerals):

1) *Corrosion vugs* = dissolution or corrosion of glass/minerals can create open cavities in which infill can occur
2) *Solution seams*= forms in matrix by dissolution and preciptitation under the influence of lithostatic load

Recrystallisation textures such as mineral overgrowths are produced by changes in the size, shape and arrangement of minerals. With increasing temperature recrystallisation often changes fine to coarse grainsize, and depending on even or uneven stress the minerals can have a uniform direction.

Alteration intensity

Subtle = plagioclase is dusted

Weak = plagioclase is partly replaced

Moderate = plagioclase is partly to completely replaced

Strong = plagioclase is completely replaced

Intense = no primary minerals left