

Welcome students to physical Properties of Mineral habits. Here you learn habit of minerals and types of habits. Learning outcomes students will be able to understand habit of minerals, distinguish and identify various habits of minerals.

Habit. The term habit is used to denote the characteristic shapes of the crystals, which is dependent on the shapes and sizes of different crystals. Thus the term crystal habit refers to the relative development of individual faces and various forms in the crystal. The descriptive terms associated with the habit or prismatic pyramidal and tabular. So here if you see this, the names of the habit are various forms in the crystal that is prismatic form pyramidal form and tabular form. So if the crystal exhibits maximum development of prism forms, then it is said to have prismatic habit. Similarly, if a crystal exhibits maximum development of pyramids then it is referred to as having pyramidal habit, while if the crystal shows maximum development of basal planes it is said to develop a tabular habit. Coming to imitative forms, the minerals assume various indeterminate forms which are not necessarily dependent on crystal characteristics, so these forms are referred to as imitative forms because these minerals imitate some inanimate objects and can be described using following terms which have their customary meaning. So this is a massive and granular Imitative form.

Massive and granular, as seen in marble, applied to a mineral specimen totally lacking crystal faces and the mineral grains are approximately of equal size, so these are the individual mineral grains as shown in this figure, and these are approximately of equal size and they are in a packed arrangement. If you see this particular specimen is of olivine and there are granules of minerals that are closely packed in this rock. In this rock the granules are of olivine. So this habit is Massive and granular.

Acicular or prismatic habit. So when the prism faces develop for most of the time, the mineral habit is prismatic, and this acicular word is used because it resembles fine, slender like needles. Example, natrolite or actinolite. Now this is 1 mineral. This mineral is extended in this direction. It forms in this direction. This is of amphibole that is hornblende, and it shows a acicular this individual hornblende crystals are developed in this way, so these are needle shaped crystals, hence having a acicular or prismatic habit. Fine slender needle like crystals example natrolite. This is a natrolite crystal. These are fine slender needle like crystals giving prismatic habit.

Amygdaloidal amygdaloidal refers to almond size, shape or almond shaped mineral masses which occur in cavities in rocks. Examples zeolite group of minerals. Now these cavities are from basalts. Now, since basaltic rocks are rich in gases, when these gases escape from the magma, they leave behind cavities or vesicles. So in these cavities or vesicles hydrothermal solutions penetrate and deposit minerals. Now, since these vesicles have a spheroidal shape, the fillings get a shape of almond and this shape is referred to as amygdaloidal habit. These are vesicles that are empty whereas these are vesicles that are filled. These are vesicles that are filled. This is a basalt where there are only vesicles seen. There are no amygdules present, so when these vesicles are filled with minerals like this, this is called as amygdaloidal habit or amygdular structure. So a mineral that fills within these cavities looks like an almond. But this is a mineral that is almond shaped and this part is cut to show you the mineral which is pyrite. This is an amygdule hand specimen of amygdule recovered from a vesicle. This is also an amygdule in one direction and this is rotated we have this mineral formed inside and on the outside this

part is stuck to the vesicle and the mineral looks like this wherein the deposition has taken place from the boundary inside in the form of layers. So these layers are seen. This is amygdaloidal.

Bladed refers to platy structures, which resemble knife blades. Best example is kyanite. So Kyanite crystallizes in this form. This is a blade type of structure where 2 dimensions are measurable and the third dimension is very thin so it resembles blades.

Botryoidal botryoidal is the word taken from Greek root botrys, meaning meaning bunch of grapes consisting of spheroidal aggregates which are displayed on a smaller scale by mutually interfering spheroidal surfaces. So these are the spheroidal surfaces individual spheroidal surfaces that mutually intermingle. This is malachite. This is an apatite showing botryoidal structure. These are botryoids, single individual botryoids that are connected along the lines. This is a psilomelane showing a botryoidal structure. These are botryoids. These are botryoids.

Columnar, columnar is a habit exhibiting a form which resembles slender columns. So this is a selenite crystal a variety of gypsum showing columnar habit. Dendritic branching tree like pattern normally produced by the deposition of the minerals in narrow planes. So there are joint planes, there are fractures within the rock through which the mineral solutions flow and they start depositing a mineral. In this case, it is manganese that gets deposited and it forms a branching tree like imitative form. This is dendritic pyrolusite again, a variety of manganese.

Drusy habit refers to rough surfaces which are due to a large number of closely arranged structures, so we have closely arranged minerals which are pointing outside and they resemble drusy. Hence the imitative form is drusy.

Fibrous fibrous habit is consisting of fine thread-like strands, so in this case there are these trends of asbestos, these are the strands of asbestos. These are fine thread like things coming out, so the imitative form is fibrous.

Foliated or foliaceous consisting of thin and separable lamellae. This is Muscovite and this is biotite. These are thin lamellae that could be taken out like papers so this particular imitative form is foliated.

Mamillated this comes from the Latin word Mama meaning breast means with an external form made up of rather large rounded prominences. So this resembles botryoids, but these are specifically called mamillated imitative forms. This is the mamillated imitative form in goethite. These are the layers along which it has grown giving rise to mamillated imitative form.

Pisolitic pisolitic is consisting of rounded particles. These are rounded particles which are present known as pisolites. This sample is of bauxite. These are pisolites and the imitative form is called a pisolitic habit. Radiating Showing crystals or fibers arranged around a central point. If we consider this as a central point of natrolite then the minerals radiate outside from this point. This way, so this is a radiating imitative form. Even in this, this is a central point, and this is a radiating imitative form.

Sheaf like is exhibiting aggregates which resemble the sheaves of wheat. So example stilbite. So the mineral is this way and it is very thin in this direction, but it is shown as sheaves. So these are the

sheaves that are seen. This is a close picture, these are sheaves are like this and they are of limited dimension. So they resemble sheaves of wheat. So the imitative form is sheaf like.

This is the bibliography.

Thank you.