

Museo dei Saperi e delle Mirabilia Siciliane

Minerals from the Museum of Mineralogy, Petrography and Volcanology

Dipartimento di Scienze Biologiche, Geologiche e Ambientali

Palazzo Centrale Università di Catania

These minerals were all formed as a result of the Mediterranean salinity crisis that occurred during the Messinian period (6.4-6.5 million years ago). During this period the Mediterranean Sea was isolated from the Atlantic Ocean due to the lifting of the Gibilterra threshold. The particularly intense evaporation due to the hot and arid climate of the region allowed the precipitation of minerals that currently form extensive outcrops in central Sicily, constituting the Sicilian evaporitic series.



Halite: it is the name of NaCl – sodium chloride and presents cubic crystals often aggregated. It is colorless but may often have a blue or violet color generally due to defects in the crystal lattice. Currently the Halite is mined in Sicily in the mines of Petralia and Regalbuto.



Gypsum: $\text{CaSO}_4 \cdot 2\text{H}_2\text{O}$ is one of the softer minerals. It is often present with large crystals, also transparent, twinned with spear iron shape or with aggregate of different morphologies. Gypsum heated above 150°C loses part of water contained therein. It is used as materials for construction and building.



Calcite: It is a common polymorph of CaCO_3 which crystallizes in the trigonal system. It can be formed from direct evaporation of supersaturated solutions or in the sedimentary deposition of biological remains.



Aragonite: It has the same chemical composition of calcite (CaCO_3) but crystallizes in the orthorhombic system. Common are the pseudo hexagonal geminate.

	Celestite: SrSO_4 , presents colorless or celestial crystals with orthorhombic forms. The samples coming from Sicily are among the most beautiful and sought by collectors.
	Sulfur: Sulfur is a native element with a characteristic yellow color. The mining activity for this mineral in Sicily seems to have begun during the Greek colonization. At the beginning of the twentieth century, the mining activity had its maximum with more than 700 quarries, over 30.000 miners and a production that covered 4/5 of the world supply, but at the end o '70s the activity underwent a deep crisis due to the new excavation technologies.
	Sulfur <i>Talamone</i>: This compact sulfur sample of brown color called <i>Talamone</i> comes from the Cozzo Disi quarry located near the town of Casteltermini, in the province of Agrigento. This was one of the most important sulfur quarry in Sicily. Wonderful minerals of lemon yellow and bituminous sulfur were extract from this mine. The miner was closed in the 1989 along the last six sulfur mines in Sicily.

	Quartz (SiO_2) crystallizes in the trigonal system, and is the second most abundant mineral in the Earth's crust.
	Biotite is a phyllosilicate mineral of the mica group. Its dark color is due to the presence of iron. It grows in flexible sheets, or lamellae.
	Wulfenite is a rare lead- and molybdenum- rich mineral (PbMoO_4) which crystallizes in the tetragonal system, of bright orange colour.
	Wolframite is a mineral containing tungsten, formerly named wolfram, and is the main source for this element.
	Crocoite is a lead chromate of formula PbCrO_4 crystallizing in the monoclinic system. It is the natural counterpart of the synthetic pigment chrome yellow, which was used, among others, by Van Gogh.
	Fluorite (CaF_2) crystallizes in the cubic system. It can assume different shades according to the present impurities.
	Pyrolusite (MnO_2) is an important ore of manganese. In this sample it displays a dendritic crystal habit, showing branches departing from a central point.