latter mechanism might have been carried out either through solid state transformation or through neoformation processes. Kaolinite has also been formed as a by-product phase during illitization of smectite.

The aforementioned alteration of smectite caused by hydrothermal activity has affected adversely the physical properties of the original bentonites. It has been found that properties like quality, grade, and viscosity deteriorate with increasing degree of hydrothermal activity. Although increasing abundance of kaolinite is ususally associated with deterioration of bentonite quality its presence in small amounts may not be harmful. This is especially true for rheological properties like viscosity.

COLOUR AND RHEOLOGICAL PROPERTIES OF SOME WHITE BENTONITES FROM MILOS AND KIMOLOS ISLANDS

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White bentonites are special materials which are prized for their whiteness and brightness in addition to the known properties of smectite-rich clays. Such materials occur in the eastern sectors of both the islands of Milos and Kimolos. They have been derived from alteration of acidic pyroclastic rocks, mainly ignimbrites. Notwithstanding their similar geochemical affinities, the white bentonites of Kimolos are superior materials compared with their counterparts from Milos in both the colour and the rheological properties. The reason for the different colour properties is believed to be closely associated with the different mineralogical assemblages present in the rocks and the different mineral chemistry. The other factors affecting colour do not vary in the two areas.

The smectite present in Kimolos is the major Fe-bearing phase, and belongs to the Chambers (Cheto) - type. On the other hand, in the white bentonites of Milos the Smecitets are almost Fe-free (beindellites and Tatatilla-type montmorillonites). Consquently iron is concentrated in Fe-oxides producing red colourations and deteriorating the colour properties of these materials. Also the bentonites of Milos carry abundant opal C-T which adversely affects their possible ulitilization in industrial applications like cosmetic and pharmaceutical without prior beneficiation.

The rheological properties of the white bentonites are affected mainly by the existence of opal C-T rather than the pH and/or nautre of the exchangeable cations. It is believed that the presence of this phase, the size of which is smaller than 2μm, prevents smectite crystallites forming a rigid "card house" structure. Consequently they do not develop high yield stress and this results in lower viscosity. On the other hand,

the development of good rheological properties of the Kimolian bentonites implies that these materials can be also used successfully in the traditional industries.

THE KEFALOS TUFF RING (W. KOS): DEPOSITIONAL MECHANISMS, VENT POSITION AND MODEL OF THE EVOLUTION OF THE ERUPTIVE ACTIVITY

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Vent areas and caldera collapse structures of the recent highly explosive eruptions of W. Kos region which deposited the Kefalos tuff ring (0.5 Ma) and the Kos non welded ignimbrite (0,14 Ma) have been immersed into the sea. This makes very difficult the evaluation of the volcano-tectonic processes. On this purpose the characteristics (grain size analysis, thickness, composition of pyroclastic components. Stratigraphic position and areal distribution, depositional mechanisms) of the Kefalos tuff ring pyroclastic sequence have been studied and presented.

Three principal types of deposits have been recognised and described: i) subordinate perlitic pumice fall deposits with very low dispersion values, ii) pyroclastic flow deposits with characteristic lenticular accumulation of well rounded lithic fragments near vent (lag breccias) and iii) very thick surge deposits with thinly bedded sandwave facies forms near vent. Lithic fragments ejected from various depths of the substratum indicates a progressive increasing of the depth of the contact between magma and seawater.

The vent position has been determined into the sea, in the central part of Kefalos bay, using isopleth lines of a basal fall layer, directional characteristics and proximal deposits distribution of the surge and flow units.

Depositional facies characteristics and distribution as well as the principal tectonic lineaments and the topography of the area lead us to conclude that the present upper limit of the semi-circular depression of Kefalos basin has nothing to do with a caldera rim. The major part of the probable calderic collapse is immersed into the Kefalos bay. Only a west edge of the collapsed structure can ba observed in the NW area of Kefalos basin.