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Condition of talc-dominated chimney formation at the shallow-water hydrothermal system in Wakamiko crater, Kyushu, Japan

Kotaro Maeto[1*], Toshiro Yamanaka[1], Youko Miyoshi[2], Junichiro Ishibashi[2], Kei Okamura[3], Hitoshi Chiba[1], Yoshihiro Kuwahara[4]

[1]Grad.Natur.Sci.Tech., Okayama Univ., [2]Grad.Sci., Kyushu Univ., [3]KCC, Kochi Univ., [4]SCS, Kyushu Univ.

Active hydrothermal vents involved chimney-like deposits have been occurred at the near shore and shallow-water depth bay head area of Kagoshima Bay, South Kyushu, Japan. From the vents high temperature (Tmax = 200degC) fluid is emitting and the chimney-like deposits are composed mainly talc with minor amount of carbonate, stibnite and anhydrite. Such talc-dominated deposits have never been reported from any other hydrothermal sites, therefore, it is interesting how such chimney-like deposits are occurred. We examined the saturation factors of each mineral observed in the deposits and calculated the formation temperature of the talc using oxygen isotopic compositions for understanding the condition of the talc-dominated deposits.

Keywords: hydrothermal vent, talc, chimney-like depsoits, condition of formation, Wakamiko crater