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**THE OCCURRENCE, GENESIS AND CHARACTERISTICS OF PRIMARY
 KAOLINITIC CLAY OCCURRENCE AT KM 12-13, BUKIT LAMPAS, SPG. PULAI-
 POS SLIM, IPOH**

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ABSTRACT: The chemical, mineralogical and textural characteristics of the Lampas Kaolin occurrence, near Simpang Pulai Ipoh and its genesis were investigated by X-ray diffraction (XRD), Differential Thermal Analysis (DTA), Thermo gravimetric analysis (TGA), Scanning Electron Microscope (SEM), Fourier Transform Infra-red (FTIR) and X-ray Fluorescence (XRF) analysis, Energy Dispersive X-ray (EDX) and Malvern Mastersizer. A preliminary attempt to evaluate its potential as an industrial raw material was carried out, including particle size analysis, moisture content, LOI, chemical composition, plasticity characteristics, firing shrinkage, brightness/whiteness and modulus of Rupture (MOR). Field evidence supported by mineralogical, granulometric, and chemical analyses suggest that the Lampas kaolin is a product of both hydrothermal and in-situ weathering of sugary aplite, leucomicrogranite, pegmatites and medium to coarse-grained, porphyritic granites of the area. Numerous occurrences of quartz-feldspar veins stockworks, silicification and illite alteration (argillic zone) were evident and characteristic of hydrothermal fluid influx system of the area. Kaolinite is the predominant clay mineral of the Lampas kaolin occurrence with quartz, feldspar and illite/muscovite occurring as subordinate and alteration minerals. Localized occurrence of halloysite is also evident. Widespread, red, orange, or brown of the more stable, lateritic clay saprolite characterizes the near surface overburden. The alumina content of Lampas Kaolin occurrence is generally between 28-34%, where impurities particularly iron oxide < 0.2% and total alkali and titania account for less than 1%. The average total alkali and iron contents are about 0.7% and 0.2% respectively. The average dry powder moisture and LOI is 1.25% and 14.0% respectively. The shrinkage and MOR values of the Lampas crude clay are moderate at lower temperatures, mainly due to its lower alkali and iron contents with over 45% (D₄₅) below the 2µm fraction and of superb whiteness/brightness, however with a lacking workability index.

Keywords: Kaolin, clay mineral, industrial clay, kaolinite and clay genesis