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The effect of calcination temperature on the characteristics and properties of titanium dioxide

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In this study, ilmenite soil particles in Gharaghaj Urmia were measured using the leaching method with hydrochloric acid to obtain high-quality and pure titanium dioxide pigment. The study involved several stages, including leaching with 37% HCL acid, hydrolysis, crystallization, and calcination. The calcination stage was investigated in this study, which is one of the most important stages in producing this white pigment. Calcination is a thermal operation on solid materials that is used for thermal phase decomposition or removal of volatile substances. Temperature, pressure, and calcination conditions can all affect the structural and photocatalytic properties of the particles obtained from ilmenite soil. Different methods exist for ilmenite calcination, depending on the specific conditions and process requirements. XRF, SEM, EDX, and XRD analyses were performed on the primary concentrate and final calcined product under different conditions.

Keywords: TiO, ilmenite,Calcination temperature , Titanium dioxide