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ABSTRACT

First of all, there is provided a production process of a synthetic quartz glass which has less impurity, has a high-temperature viscosity characteristic equal to or more than that of a natural quartz glass, and hardly deforms even in a high-temperature environment, and especially a production process of a highly heat resistant synthetic quartz glass which is free from the generation of bubbles and is dense. Secondly, there is provided a highly heat resistant synthetic quartz glass body which is easily obtained by the production process of the present invention, and especially a transparent or black quartz glass body which is free from the generation of bubbles, is dense, has high infrared absorption rate and emission rate, and has an extremely high effect for preventing diffusion of alkali metal. The process is a process of producing a highly heat resistant quartz glass body having an absorption coefficient at 245 nm of 0.05 cm^{-1} or more, and the silica porous body was subjected to a reduction treatment, followed by baking, thereby forming a dense glass body.