Samples of GdBO3 doped with $Ce^{3+}$ embedded in amorphous silica matrix were obtained by sol gel process and heat-treat at 1000°C for 2h in argon atmosphere. After elaboration, the samples were irradiated with γ-rays using cobalt ($^{60}Co$) source in the dose range from 1 to 5kGy. The irradiation effect of γ-rays on structural and optical properties of the synthesized samples were investigated by X-ray diffraction (XRD), transmission electron microscopy (TEM), Fourier transforms infrared spectroscopy (FTIR) and photoluminescence spectroscopy. XRD and TEM-EDS results reveal that γ-ray irradiation reduces the crystallite size from 55nm to 30nm. It is found from FTIR study that the absorption bands intensity assigned to structural groups containing BO4 and BO3 units as well as the banding of Si-O-Si bond increases with γ-ray dose up to 4kGy. While photoluminescence measurements show that the emission bands attributed to the 5d→4F transition of $Ce^{+3}$ ion intensity decreases, it is still significant even after irradiation to a dose of 5kGy. From this results it is concluded that the γ-ray irradiation up to a dose of 5kGy improve the structural and morphological quality of the synthesized GdBO3/silica: $Ce^{3+}$ without altering significantly its luminescence properties.