In this work, the boriding of binary Ti-Ni shape memory alloys was carried out in a solid medium at 1173 and 1273 K for 2, 4 and 8 h using the powder pack method with Ekabor-Ni powders. The boride layer was characterized by optical microscopy and scanning electron microscopy. The obtained results show that boride layer thickness increases with the increasing boriding temperature and time. Depending on temperature and boride layer thickness, the diffusion process is thermally activated, with the mean value of the activation energy being close to 67 kJ/mol.