An experimental study is carried out to compare the thermal performance of a sintered powder metal wick heat pipe. Pure water and absolute ethanol are used as two different working fluids. The pipe is made of copper with 300 mm length, 14 mm diameter, and 1.0 mm wall thickness. The wick is made of copper powder. All the experiments are accomplished and the heat pipe is at the horizontal position (θ=0o ). The heat flux changed within the range (2.8 -13.13) kW/m2 , while all other conditions remained constant. The results show that the thermal performance of the heat pipe is better when water is the working fluid, where the operating temperature and the thermal resistance of the heat pipe are lower when the water is the working fluid.