

7. The efficiency of a Carnot engine depends only upon the temperatures of the two heat reservoirs.

$$e_c = (T_H - T_L) / T_H$$

This calculation requires that we use absolute temperature in Kelvin, so we must first convert the two Celsius temperatures to Kelvin by adding 273.2 to each. Thus $T_H = 673.2 \text{ K}$ and $T_L = 373.2 \text{ K}$

$$e_c = (673.2 \text{ K} - 373.2 \text{ K}) / 673.2 \text{ K}$$

$$e_c = 0.446 = 44.6\%$$