Task #80778

Calculate the final temperature of 38 mL of ethanol initially at 20^{o}C upon absorption of 878 J of heat. (density of ethanol =0.789 g/mL)

Solution.

$E = Q = m*c*\Delta t$

$\Delta t = Q/c*m$

$m = \rho*V$

$m = 38*0.789 = 29.982$

The special heat capacity of ethanol is 2.46

$\Delta t = 878/2.46*29.982 = 11.9^{o}C$

$\Delta t = t2 - t1, t2 = \Delta t + t1$

Answer:

$31.9^{o}C$

$\Delta t = t2 - t1, t2 = \Delta t + t1$