Answer on Question #80697 - Chemistry - Physical Chemistry

Question:

Calculate the change in entropy when 350 g of water at 5 degrees C is mixed with 500 g water at 80 degrees C , assuming that specific heat of water is 1 cal/degree.gram ?

Solution:

$S = Q/T$

$Q = m*c*T$

$Q1 = 350*1*5 = 1750$ cal;

$Q2 = 500*1*80 = 40000$ cal;

$S1 = 1750/278 = 6.29$ cal/K;

$S2 = 40000/353 = 113.31$ cal/K;

$\Delta S = S2 - S1 = 107$ cal/K.

Answer: 107 cal/K.