

Purpose: to calculate the heat of fusion for ice, using calorimetry.

Procedure: (1) Weigh cup (2) fill cup 1/2 full of tap water and reweigh (3) reassemble calorimeter and take initial temperature (4) grab 1 or 2 ice cubes and pat dry, then gently place in calorimeter cup (5) stir and get final temperature (6) reweigh the cup with the water and melted ice in it (7) Clean up.

Data:

Specific heat of cup	903 J/kg°C
mass of cup	kg
Mass of cup + water	kg
T _i of cup and water	°C
T _i of melting ice	0 °C
T _f of cup + mixture	°C
Mass of cup + mixture	kg

Calculations:

Mass of warm water	kg
Mass of ice	kg
ΔT of water	°C
ΔT of cup	°C
ΔT of ice turned to water	°C

Questions:

1. How much heat was lost by the warm water? $Q = m c \Delta T$
2. How much heat was lost by the cup? $Q = m c \Delta T$
3. How much heat did the ice water absorb once it had melted? $Q = m c \Delta T$
4. How much heat is left over that must have melted the ice?
5. What is the heat of fusion of your ice? $H_f = Q/m$
6. % difference if actual H_f of ice is 334 000 J/kg?
7. Why is there a difference between your value and the accepted value?