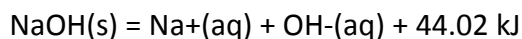# Answer on Question #64170, Chemistry / General Chemistry

Question:

• Use the equation below to find heat released if 2 moles of NaOH was dissolved in water.

NaOH(s) = Na+(aq) + OH-(aq) + 44.02 kJ

• Calculate the amount (in moles) of Na+ ions produced when the reaction above releases 1000 kJ.

Solution:

As the given equation shows the one mole of NaOH releases 44.02 kJ of heat while dissolving in water (it is called molar heat of dissolving, in our case it equals to 44.02 kJ/mol). So if we want to find amount of heat released if 2 moles was dissolved in water we just have to multiply the molar heat by number of moles.
Do the calculation: amount of heat = 2 mol * 44.02 kJ/mol = 88.04 kJ.

If we want to find number of moles that produce given amount of heat we have to divide that amount of heat by molar heat.
Do the calculation: number of moles = 1000 kJ / 44.02 kJ/mol = 22.72 moles.
The equation shows that 1 mole of NaOH produces 1 mole of ions $Na^+_{(aq)}$. So 22.72 moles of NaOH produce 22.72 moles of Na^+ ions.

Answer:
88.04 kJ of heat released if 2 moles of NaOH was dissolved in water.
22.72 moles of Na^+ ions produced.

Answer provided by https://www.AssignmentExpert.com