Answer on Question #41908 – Chemistry – Other

Question:

How many grams of NaCl would you need to prepare 550 ml of a 2.5M solution?

Solution:

$C = \vartheta/V$

where C is concentration of NaCl; V is volume of NaCl; ϑ is number of moles of NaCl.

$C = 2.5$ M

$V = 550$ ml= 0.55 L

Then

$\vartheta = C*V = 2.5*0.55 = 1.375$ mole;

$\vartheta = m/M$

where m is mass of NaCl, M– is molecular mass of NaCl.

$M(NaCl) = 22.99 + 35.45 = 58.44$ g/mole

Then

$m = \vartheta*M = 1.375$ mole$*58.44$ g/mole= $80.355 \approx 80.4$ g

Answer: 80.4 grams of NaCl.