How would you prepare 50 ml of 0.001 M potassium dichromate dissolved in water?

Answer: To obtain 50 ml of 0.001 M solution of potassium dichromate we need to weigh a sample of solid potassium dichromate: $m(K_2Cr_2O_7) = C(K_2Cr_2O_7) \cdot M(K_2Cr_2O_7) \cdot V/1000 = 0.001 \cdot 294 \cdot 50/1000 = 0.0147$ g;

After that we must dissolve this sample in 50 ml of distilled water to obtain 50 ml of 0.001 M potassium dichromate solution.

Or, in order to minimize the weighing inaccuracy of such small sample, we can take a ten times bigger sample mass (0.147 g) and dissolve it in 50 ml of distilled water. After that we'll take 5 ml of that solution, dilute it with distilled water to the volume of 50 ml, and obtain a 0.001 M potassium dichromate solution.