# Answer on Question#75566 – Chemistry – General chemistry

**Question:**

SINCE Phenylalanine is reduced to Phenylalaninol in 16-18 hours under reflux with Sodium Borohydride and Sulfuric Acid in Dry Tetrahydrofuran. My question is to reduce 100gr of phenylalanine how much sodium borohydride and sulfuric acid is need?and in how many ml of dry thf must refluxed ? And after reflux i can remove the sodium borohydride with a filtration and and the thf/sulfuric acid/phenylalanine batch neutralised with NAOH and Phenylalaninol extracted with Toluen?

**Answer:**

You should use 2.5 eq $NaBH_4$ :

$$m(NaBH_4) = 2.5 \times M(NaBH_4) \times \frac{m(Phe)}{M(Phe)} = 2.5 \times 37.83 \frac{g}{mol} \times \frac{100\ g}{165.19 \frac{g}{mol}} = 57.3\ g$$

You should use about 1000 mL THF.

**Caution!**

You should not use reflux. The reaction carries out under room temperature overnight. After you should **carefully** add about 100 mL methanol to destroy excess $BH_3$ (it formed during the reaction). The mixture have to be concentrated to 500 mL and you should add 5N NaOH (1L). For extraction you can use $CH_2Cl_2$.

**Source:**

https://www.sciencedirect.com/science/article/pii/S0040403900611334