Limiting Reactant – Study Guide

*section 4.4 in OpenStax*

**Limiting Reactant**

The limiting reactant is entirely \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and limits the amount of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ generated.

The theoretical yield is\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

The actual yield is\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

Show the equation used to calculate percent yield:

***Watch video tutorial on*** [Limiting Reactants](https://www.youtube.com/watch?v=dxvAQPtvHDI&feature=youtu.be)

Practice Problem:

C6H12 + 4 Br2 🠢 C6H8Br4 + 4 HBr

Molar mass = 84.1 159.8 399.7 80.9 g/mol

Based on the above equation, calculate the theoretical yield and percent yield of C6H8Br4 for an experiment where 15.0 g of C6H12 are reacted with 95.0 g Br2 to give 55.5 g of C6H8Br4. (Molar masses are given below each compound.)

*ans:*

*theoretical yield = 59.4 g*

*percent yield = 93.4%*

**End of Chapter 4 Practice Problems**

#61, 63, 71

For detailed solutions to these problems, go to the [OpenStax website](https://openstaxcollege.org/textbooks/chemistry/resources) and download the “Student Answer and Solution Guide.”