Percent Error

This video will show you how to calculate percent error.

Percent Error

Percent error should be used when you have a known or accepted value to compare to the experimental value which you collected in lab or based on data you collected in lab. Percent error is a measure of accuracy in the experiment. It tells you how far or how close you are to the accepted value. The formula for percent error is accepted value minus experimental divided by accepted times 100.

Example

Let’s look at an example. The average mass of a metal slug was measured by a student in the lab and found to be 3.142 grams. The accepted value of the slug was 3.216 grams. What is the percent error in the student’s data?

So what we have shown here are the experimental value, 3.142 grams and the accepted value, 3.216 grams. Both of these values were given in the sample problem. We also have the formula percent error equals accepted minus experimental divided by accepted times 100 shown. And what we’re going to do is plug our values into this formula. So we have equals accepted, 3.216 minus our experimental, 3.142 divided by the accepted, 3.216 times 100. The straight lines on the top of the fraction are absolute value marks. Percent error is always a positive value.

If I do the math, I end up with a percent error of 2.301%. I need to keep four digits because I have four digits in each of my values, I need to get four significant figures in my answer. If you need help calculating percent error or with any other questions for lab, see your TA, go to the learning center, or contact the lab supervisor.

(end)