

## **IB Chemistry - Internal Assessment Lab Format**

The following titles and subtitles should be used for your lab report and given in this order within your lab report.

Use the following sheet as a checklist when writing lab reports. Each lab report may focus on different sections so be sure that you are focusing on the section(s) that the lab is addressing.

### **Introduction**

A short paragraph explaining to the reader what was performed during the experiment. Include diagrams, if appropriate.

### **Design**

#### **Research Question**

Focused and not ambiguous in any way.

Should be written in the form "How is y dependant on x?"

#### **Variables**

Independent

Dependent

Controlled

Variables are identified and listed correctly.

#### **Method**

##### Measuring the Variables

List the apparatus used.

Include a labeled diagram, if appropriate.

Tools with uncertainties and quantities are clearly stated.

Describe how you are going to change and measure the independent variable.

Describe how you are going to measure the dependent variable.

State the ranges of the independent variable you are going to use.

State how many times you are going to repeat the measurements of the dependent.

If a graph is going to be generated, you must collect at least 5 data points.

If an average value is to be calculated, the procedure should be repeated until consistent results are obtained.

##### Controlling the Controlled Variables

Describe how you controlled other variables.

### **Results**

#### **Raw Data**

Both quantitative and qualitative data must be recorded. (Make sure this is raw data only.)

Data tables are easy to read and clearly labeled.

A title is provided.

Make sure that all columns, etc. are properly headed & units are given.

The decimal points should agree.

Uncertainties are mandatory and can be given within column headings for equipment precision and as footnotes beneath data tables for other types of uncertainties.

The number of significant figures in the measurement is consistent with the uncertainty.

## **Processed Data**

Headings and the equation being used are provided to show the reader what you are doing.

Headings are clear.

An example of one set of raw data's calculation is shown through completion. The other sets do not need to be shown yet the answers to their calculations should be shown.

Uncertainties are propagated.

Significant figures are followed (round at the end).

Units are provided.

Graphs are properly labeled and clear.

Graphing raw data only counts as processing if the best-fit line, gradient, etc. are determined.

## **Conclusion & Evaluation**

### **Conclusion**

Start by addressing whether your data seems to support or refute a theory or known value.

Specifically refer to your graph/data to give support to this discussion.

Avoid the use of the word "proof" or "proves" within your conclusion, as your data will not prove anything.

Compare the results with data values and calculate a percentage error between your results and a literature value.

Compare the % error to the uncertainty.

Discuss any outlier points could be discussed (if there were any outlier points) as well as possible reasons for those outlier points.

### **Evaluation**

This paragraph section discusses how well the experimental design helped answer your experimental question.

Comment on...

Controlled variables

Equipment used and the method you used.

Range of values and number of repetitions.

Time management.

### **Improvements**

In reference to the evaluation, what realistic and useful improvements could be made if you were to do this investigation again?

Discuss how random error can be reduced and how systematic errors can be removed. Be specific!!!

For an example and other notes on internal assessments, go to <http://www.rcnuwc.org/ibphysics/ia/IA1.html>