

Determination of K_{eq} Prelab

Please do not give short (one or two word answers) to the questions.

ALL Answers must be written by hand directly into your lab notebooks.

1. Consider the reaction: $H_2(g) + I_2(g) \rightleftharpoons 2HI(g)$

A reaction mixture in a 3.51 L flask at a certain temperature initially contains a mixture of 0.865 grams of H_2 and 103.7 grams of I_2 . At equilibrium, the flask contains 92.3 grams of HI . Calculate the equilibrium constant for this reaction at this temperature.

Show your work.

2. This question has two parts.

- a. This experiment is separated into two sections: the standard curve and the determination of the equilibrium constant. What are the $[Fe^{3+}]$ and $[SCN^-]$ before mixing in each part?

Standard Curve	Determination of the equilibrium constant
$[Fe^{3+}] =$	$[Fe^{3+}] =$
$[SCN^-] =$	$[SCN^-] =$

- b. Briefly, explain why the concentrations of the Fe^{3+} and SCN^- are different in the two parts of the experiment.