

ACID-BASE TITRATION

Event Overview:

Teams will be given an unknown concentration of an acid solution (HCL). Using a known concentration of a basic solution (NAOH), through the titration technique, the concentration of the acidic solution will be determined. Teams are to report the average concentration value as well as the standard deviation. $[HCL] = [Conc](ave) \pm \delta$ where $[Conc](ave)$ is the average value and δ is the standard deviation.

Teams will also be asked to provide the balanced equation for the reaction.

Finally teams will take a 15 question-multiple choice (MC) quiz related to neutralization reactions terminology.

Equipment, solutions and scrap paper will be provided. Teams will need goggles, aprons, a pencil and a calculator.

Teams are responsible for bringing safety goggles and lab aprons. Teams will not be admitted into lab without safety equipment and will receive a 5 point score per NSSL rules of disqualification. Deductions (5 points) will be taken any occasion a team member violates the safety rules (for example: inappropriate use of goggles, apron).

Scoring: The event will be scored out of a possible 50 total points. Teams will be ranked based on accuracy. After all teams report their concentration values, the closest to the accepted value will receive the most points; the next one will receive the second highest score and so on. (MAX: 30 points). Five (5) points will be awarded for correct calculation and use of the standard deviation. The MC quiz will be worth 15 points. Deductions will be taken off the point total earned by that team. Raw scores will be ranked and normalized per NSSL rules. Teams asked to leave lab for safety concerns are considered disqualified and will receive a normalized score of 5.