

CHEMICAL OBSERVATION

(FINAL DRAFT 12.13.07)

A

TEAM EVENT: Division B **ESTIMATED TIME NEEDED FOR EVENT:** 3-Parts, Part-1: 25 Min, Part-2: Clean, Part-3: 15 Min.

MAX/MIN NUMBER OF STUDENTS NEEDED TO PARTICIPATE: Max of Two (2)

OBJECTIVE(S): Students will demonstrate their abilities to perform chemical tests, make observations of these test and accurately document their observations.

COMMENTARY: Chemical Observation requires that participating students be able to test unknown powdered solids, make accurate observation and document these observations. It **does not** require that students be able to identify the solids.

B

EQUIPMENT PROVIDED BY EVENT JUDGE(S): Event hand-outs, unknown powdered solid, Distilled Water, One-Molar sodium hydroxide (NaOH), One-Molar hydrochloric acid (HCL), Pens, Pencils. Also, event judges may provide, but are not obligated to provide: Thermometers, Hot Plates, Balances, Solvents, Precipitating Reagents or any other items of their choosing.

EQUIPMENT NEEDED TO BE BROUGHT BY PARTICIPATING STUDENTS: Students are required to bring: OSHA approved vented safety goggles, lab coat(s)/apron(s), blank paper, writing utensil(s). They are also required to bring a small, covered plastic container (not larger than 18"x12"x8") which is able to hold (tools with which they are familiar): conductivity tester, up to 36 stir rods/sticks/spoons, up to 36 mixing containers/plates and a small sample of neodymium or other magnetic substance (not more than 10 grams).

C

SAFETY CONCERNS: Note first and foremost, Chemical Observation can be a dangerous event and safety is of the utmost importance! Students are expected to respect this concern. If Chemical Observation event judges are uncomfortable with student behavior, they are authorized to disqualify participating students and/or teams and ask them to leave the premises without explanation. Beyond that, Chemical Observation is also expected to be a fun event. However, out of respect for safety, Chemical Observation participants are required to bring and wear lab coat(s)/apron(s) and OSHA approved vented safety goggles (not safety glasses) while in the room/lab being used for Chemical Observation activities.

EVENT PROCEDURES: Chemical Observation is a three-part event. **Part-1**, estimated to run about 25 minutes, may include a brief introduction of the event, announcements, safety warnings, clean-up procedures and specific requirements unique to any given tournament. **Part-1** also requires that students use equipment and supplies provided by the event judge(s) and those brought by themselves to safely test an unknown powdered solid, make accurate observations and document these observations using writing utensils provided by the event judge(s). **Part-2** requires that teams completely clean their test areas in accordance with standard chemical clean-up procedures and/or details provided by event judge(s). Event Judges will allow a pre-identified amount of time for clean-up. Time spent cleaning up by teams beyond this pre-identified amount of time will be subtracted from time allowed for completing Part-3 of the event. **Part-3** requires that students use documentation of observations in Part-1 of the event to answer ten questions asked about their test results by the event judge(s). Participants will be allowed to answer questions without having documented an observation. But, full credit will only be given to students/teams who have made accurate documentation of their observations as assessed by the event judge(s). Also, event judges may provide items which are identified on the list of Equipment Needed To Be Brought By Participating Students above so that all attending students could, theoretically, conduct at least a good number of the tests required of the event. But, they (the event judges) are not required to do so. Students who would need to borrow equipment would need to return equipment and they would not be scored/ranked higher than students/teams who brought all required item. Part-1 test time and Part-2 clean-up time would be used by students borrowing items from event judges.

D

TYPES OF TESTS/OBSERVATIONS: Solubility, Flame, Saturation, Absorbancy, Thermodynamics, Burning, Conductivity, Gases, Acidity, Crystal Structure. Event judges are not limited to this list.

SCORING: Judges will score in two parts: 1) individual questions and 2) student observations based on pre-determined point values of each of ten questions and their corresponding observation. Students will be required to document observations on an Observation Sheet in pen (in Part-1) and then (in Part-2) will use pencil to answer questions provided by the event judge(s) on an Answer Sheet **AND** mark observations on their Observation Sheet with a number corresponding to the question number. Students failing to clearly mark their observations (as assessed by the event judge(s)), or students who have not documented observations will be scored lower than students who do provide clear, accurate documentation of their observations on individual questions. Answers provided on the answer sheet and observations will be scored in accordance with the predetermined expectations of the event judge(s) based on accuracy, detail and clarity of the answers and documentation of observation.

F

ACCOUNTABILITY: Event judges, not coaches, parents, tournament directors or any other individuals, are responsible for holding students accountable for abiding by the rules of this event.

G

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