



# The Laboratory Safety Institute

*An International Center for Health, Safety, and the Environment*

## **Suggestions for Instructions to Flame Test Demos**

The following suggestions are intended to serve only as a supplement to instructions for performing flame test or other demos with alcohol. They are not intended to be sufficient to safely perform these demonstrations.

1. Include a section (in the written procedure) after the materials for safety materials and facilities: chemical splash safety goggles, safety shield (or chemical fume hood).
2. In the prep room, transfer the minimum amount of methyl alcohol needed to perform the demo (not more than 50 ml) to a small sealable bottle or dropping bottle.
3. Leave the alcohol supply in the flammables cabinet.
4. Bring only the smaller bottle into the lab or lab/classroom.
5. Reduce amount of salts to 3-5 grams and alcohol per Petri dish to not more than 5ml.
6. State explicitly in the safety precautions to add the alcohol to all of the Petri dishes before lighting any of them.
7. Place a Petri dish cover or watch glass over each dish as it is prepared to reduce evaporation.
8. Remove the cover just before lighting the alcohol.
9. Replace the cover over the each dish to help ensure it is properly extinguished before lighting the next dish.
10. Always have a shield between the demo and your students when fire, flames, or reactive, flammable, toxic or corrosive chemicals are involved.

11. Clarify that all person viewing the demo should be wearing **chemical splash goggles**.
12. Petri dishes should only be filled once. Do not try to refill if the dish does not ignite properly.
13. As with all demonstrations, the teacher should master the procedure in the absence of students before allowing student to be present.
14. All science teachers should receive training as described in the OSHA Lab Standard, 29CFR1910.1450 (irrespective of whether their district is covered or not by state or federal "OSHA" regulations).

The Laboratory Safety Institute will be happy to review written procedures on request and provide suggestions for creating safer and healthier demonstrations.

*Jim Kaufman*

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