National Science Teachers Association

Safe Handling of Alcohol in the Laboratory

In the wake of recent classroom incidents involving methanol, the National Science Teachers Association has provided their recommended procedures for the safe handling of alcohols. NSTA is the largest organization in the world committed to promoting excellence and innovation in science teaching and learning for all. NSTA's current membership of 60,000 includes science teachers, science supervisors, administrators, scientists, business and industry representatives, and others involved in and committed to science education.

After the tragic burning of two students in an Ohio school science class in 2006, and additional events in early 2010, a news journalist asked the following question of safety consultants, "Should alcohol be banned from K-12 schools?" It is our job as science teachers to teach students how to minimize risks associated with hazardous chemicals such as methanol. Teachers, always ask yourself before doing in laboratory or demonstration, "What would a reasonable and prudent person do?"

Procedure for Safe Handling of Alcohol

1. Always practice a laboratory or demonstration before using in the classroom.
2. Wear indirectly vented chemical splash goggles, chemical resistant aprons or lab coats and chemical resistant gloves. Methanol and other alcohols are toxic-avoid inhalation and skin absorption.
3. Handle alcohols in a chemical fume hood or in a well ventilated (6 - 10 room exchanges / hour) laboratory. (NFPA 45)
4. Know where the A-B-C fire extinguisher, fire blanket, eye wash and shower are located if needed - should be 10 seconds access within the laboratory being used. Teachers should receive training in using fire extinguishers if they are expected to use them.
5. Know where spill materials are located in the event of a spill.
6. Do not work alone in the laboratory.
7. Ensure that all ignition sources are removed from the area near the alcohol. The primary reagent alcohol container should be kept in the chemical storeroom. The minimum quantity of alcohol needed for the experiment should be available to students. Remember the vapors of methanol and other alcohols are flammable and denser than air.
8. Know the chemical and physical properties of all chemicals that are used in the laboratory or demonstrations. Refer to the Material Safety Data Sheets (MSDSs) and share the relevant information with students.
9. Conventional alcohol lamps are unsafe and should not be used by students!
10. When using any flammable in a demonstration, be sure there is a shield between the teacher and the students. Keep students away from the demonstration table.
11. Tie back hair, tuck inside a collar/shirt and do not wear loose clothing (e.g., baggy sleeves, etc.)