



Safety Q and A: You have questions? We have answers!

The STAO Safety Committee

The STAO Safety Committee welcomes enquiries, with respect to safety issues, from STAO members. Please send your questions to the Safety Committee Chair (ralph_chou@stao.org). Your questions and the STAO Safety Committee responses may be published in *Crucible*, particularly if the information is deemed of general interest to other STAO members. Anonymity will be guaranteed.

QUESTION# 45: *The Fire Marshal wants a letter from me outlining the intended use of fume hoods in the schools. Do you know of any existing policies/regulations to this fact? Can you provide any input? I would appreciate any assistance that you may provide in this matter.*

RESPONSE: Fume hoods are needed when, without them, there would be a significant exposure to dusts, vapours or gases hazardous to health. Teachers frequently require access to a fume hood for handling and/or disposal of certain hazardous chemicals encountered in teaching the Ontario science curriculum. In addition to their use for handling noxious fumes, fume hoods with spark-proof motors and switches can also be valuable for handling flammable vapours.

Some examples of situations in which teachers may need to use fume hoods include the dilution of concentrated acids and concentrated ammonia solutions; preparation of reagents such as bromine water and chlorine water; teacher demonstration of chemical reactions which release hazardous gases such as chlorine, sulfur dioxide and nitrogen dioxide; activities involving the use of volatile organic solvents; handling hazardous chemicals such as certain enzymes, biological stains, dyes and indicators prior to making a solution; treatment and extensive

dilution that may be necessary before some hazardous chemicals can be disposed of safely, etc.

The Workplace Hazardous Materials Information System (WHMIS) has resulted in science teachers regarding exposure to gases and vapours in school science with perhaps much more concern than in the past. Material Safety Data Sheets (MSDS) provide teachers with detailed hazard and precautionary information with respect to the chemicals they use, and identify these situations in which a fume hood will be required. The Occupational Health and Safety Act (OHSA) emphasizes the obligation of District School Boards to provide adequate fume hoods as they contain a requirement that employers shall provide equipment to prevent or control exposure to substances hazardous to health when, without it, exposures are assessed to be unacceptable. The OHSA also stipulates that employers must take steps to see that such control measures are used, tested and maintained.

QUESTION #46: *Our school currently has a problem with a fume hood. Do you know of a test that can be used to determine if the hood is drawing the proper amount of air?*

RESPONSE: The recommended face velocity for a fume hood is 45 to 60 m/s, which would be enough to blow a piece of facial tissue across a bench. To see if air is being



drawn, a couple of paper streamers taped to the sash will give immediate visual evidence. However, the STAO/PSO Safety Committee recommends that a company that specializes in ventilation measurement be consulted to

ensure that the fume hood is operating properly. Once it is tested, stickers can be applied to indicate the correct sash height for optimum airflow.

