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# 42: I teach a hydraulics and pneumatics workshop to Grade 8 students for* Scientists in School*. I am amazed at how few schools have a syringe safety policy in force. With the two or three schools I've been in that have a policy (sorry, I can't remember the schools), letters are sent home to parents explaining that syringes used for science experiments could be dangerous if not handled safely (i.e., shooting water at another student and hitting them in the eye).

I point out to each class that a 10 mL syringe can possibly rupture a person's eardrum if put into a person's ear and the plunger is depressed. A 10 mL syringe uses a fluid 'under pressure' and the air has to go somewhere.

Although horseplay is not allowed in science classes, precaution is warranted, I think, when using syringes.

Does STAO have a document in its safety regulations regarding the proper, safe use of handling syringes?

RESPONSE: The recently developed *STAO Safety Bulletin #18* (April 2007) provides the following recommendations with respect to the use of syringes by students. These syringes should NOT have a needle attached!

Teachers should ...

- Teach students how to use a syringe correctly.
- Instruct students NEVER to point the syringe at another student.
- Ensure that syringes are in good working order at the beginning and end of use.
- For first time use, remove the small plastic cap from the end of the tube. These caps can be thrown out.
- Check that the airtight black rubber seal is at one end of the piston.

Note: *The plunger's black rubber seal in new syringes has generally been treated with a thin coating of silicone oil. This lubricant washes off. It can be replaced with silicone oil, silicone spray, or KY jelly. However, it should also be noted that silicone spray contains a hydrocarbon propellant that will damage the rubber seals after several uses.*

Students should be instructed to ...

- Wear eye protection when using syringes. (Safety glasses or goggles should be worn at all times during labs in case rubber tubing or pistons pop off the barrel.)
- Tie long hair back before starting experiments.
- Point syringes away from people.
- Ensure that rubber tubing, if used to connect two syringes, is tightly in place at the end of each barrel before starting experiments.