

LESSONS TO BE LEARNED

Generated from Actual Incidents by EHSO

October, 2008

- Type of Incident:* Excessive liquid nitrogen tank pressure release
- What Happened:* Researcher was alarmed by constant hissing of liquid nitrogen tank
- Immediate Cause:* Potential Over-pressurization
- Root Causes:* Insufficient training and unfamiliarity with the design of cryogenic liquid cylinders.

Corrective Actions: Know your cryogenic liquid tanks and who to contact: Cryogenic liquid cylinders are insulated, vacuum-jacketed pressure vessels which operate at pressures up to 350 psig and hold 80 to 450 liters of liquid. The cylinders are equipped with pressure relief devices to control internal pressure. They usually have a pressure relief valve for primary protection and a frangible disc for secondary protection. Under normal conditions, they periodically vent, producing a hissing sound. Do not plug, remove, or tamper with these devices. Contact the vendor, Airgas' emergency phone 800-637-9353 or their Emergency Response team 866-734-3438 and EHSO emergency number 312-996-SAFE if you experience difficulty operating the valve or believe the cylinder is malfunctioning. If Airgas does not respond, contact Chemtrec (800-424-9300), an industry-wide organization that coordinates chemical incident response.

Additional information about cryogenic liquid handling and storage is in the UIC CHP Part 2, Section 4.3 <http://www.uic.edu/depts/envh/HSS/Documents/CHP2007.pdf>

