



Explosion in a fume hood leaves a student badly burnt

What happened?

A glass stopper on a Tetrahydrofuran (THF) reflux still was ejected violently, shattering inside the fume hood. A graduate student working with Sodium metal in the fume hood was splashed as the hot THF was ejected from the still and seconds later the THF vapour ignited, creating a fireball inside the fume hood. The fire from the hood ignited the student's hair and caused facial burns. Attempts to extinguish the fire with the ABC fire extinguishers in the laboratory were futile.

What was the cause?

The root cause of the pressure buildup in the spill has not been determined. There had been problems with the still some days prior to the incident, but the defective parts had been replaced and the still had appeared to be functioning normally immediately prior to the incident. There were multiple potential ignition sources present in the fume hood, including an electrical outlet, stir plates, a heating mantle and a temperature controller.

What are the lessons learned?

1. Where pyrophoric metals are used, a Class D fire extinguisher must be available in the immediate vicinity. Review the chemical and electrical hazards in your space to determine if the correct fire extinguishers are available.
2. While stills are generally useful and safe tools in laboratories, there is the potential for harm if over pressurization occurs. Where a fume hood is used to house a still, the fume hood should be dedicated entirely to the still – no other work should be done in that hood.

Resources Available

- [Fire Extinguisher Types](#)
- [UBC First Aid](#)
- [UBC Chemical Safety](#)
- [UBC Local Health & Safety Committees](#)
- [Contacts for Risk Management Services](#)