



SAFETY ALERT

University of Minnesota Lab Accident

RISK MANAGEMENT & SAFETY

Incident Date: June 17, 2014
Category: Chemical Hygiene
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Description

An explosion last month in a chemistry lab at the University of Minnesota injured a graduate student. The student injured his eardrum, arm and side, and needed surgery to deal with glass shards. He was not severely burned. The location of his injuries indicates he was reaching into the hood when the explosion happened.

**Photo of the fume hood after the explosion.
Credit: University of Minnesota**

The student was making [trimethylsilyl azide](#) (TMSN₃). The process included distillation of 50-100 g of the material in a hood behind a safety shield. The student had done this several times previously (although perhaps not on this scale). The speculation is that the TMSN₃ may have been old and/or wet (contaminated by hydrazoic acid, which is much more shock sensitive). The safety shield absorbed much of the impact (chemical hood face may have been up at the time of the explosion). Thankfully the graduate student will survive following at least two surgeries & several days in the hospital.



Takeaway #1:

Notwithstanding the violence of an explosion (photograph) that filled the lab and then much of an entire floor of the building with smoke, neither the sprinkler system nor the building fire alarm was set off. The fire department was notified by phone and some time later by a pulled fire alarm. They responded as promptly as you would expect, but in the interim between the explosion and someone pulling a fire alarm, there was no mechanism to coordinate the evacuation of the chemistry building, notwithstanding the release of a potentially toxic substance into the labs and hallways.

Discussion point: Following a catastrophic accident, a reminder that phone notification to NDSP alone is incomplete. The alarm must be pulled to alert the building.



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Takeaway #2:

A strongly mitigating circumstance in this accident was a graduate student who first responded had EMT training, and knew what medical care to provide prior to the arrival of the first (professional) responders.

Discussion Point: REMINDER—If you or someone else has been injured and is in need of medical assistance, immediately call 631-5555 or 911 for emergency assistance.

Takeaway #3:

The “first responders” opened doors and windows in an attempt to disperse the smoke.

Reminder: DON'T do this! Open the remaining hoods in the lab to “emergency air flow” to disperse the smoke/reaction debris to the roof.

Photo of Minneapolis Fire Department.

Credit: Josie Faue



A special thanks goes to Dr. Mary Prorok, Project and Administrative Program Manager with Chemistry and Biochemistry for providing additional details on this incident and suggested talking points. Thanks Mary!!

How You Can Get Involved By Sharing Your Topics

RMS strongly encourages anyone to bring to our attention topics that could serve as possible Safety Alerts or what is also known as Lessons Learned. Safety Alerts (or Lessons Learned) are shared to improve the health and safety of laboratories by benefiting from the experience of others. They can include sharing valuable information such as best practices, warning others of an adverse practice, experience or product. The overarching goal is to prevent recurring issues and improve laboratory health and safety performance.

If you have something in mind, give us a call at 631-5037.