

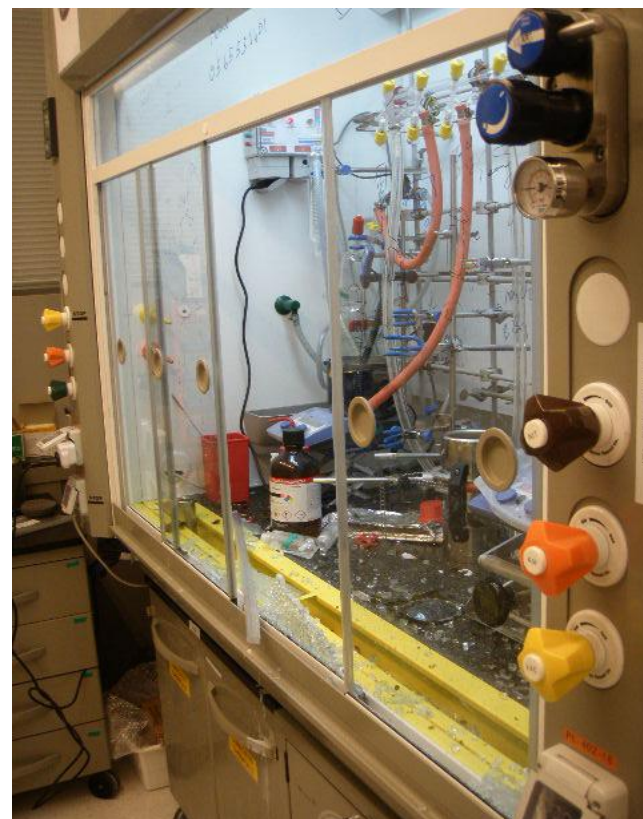
# SAFETY ALERT

## REUSED SOLVENT DANGER

**Purpose of the safety alert:** Provide warning of the dangers of reused solvents. Recently a bottle of acetone, used for dry ice cold bath, suddenly exploded inside a chemical fume hood. The force of the explosion caused the glass sash to shatter, scattering pieces of broken glass into the lab. Fortunately the area was unoccupied when the explosion occurred. Subsequent investigation revealed:

- A partially full one liter bottle of reused acetone was the source of the explosion.
- The acetone had been reused – previously it had been used to make a cold bath where it was cooled with dry ice.
- A build-up of pressure inside the bottle caused the bottle to suddenly explode, nearly 20 hours after it had last been used.
- The build-up of pressure inside the bottle was most probably caused by:
  - Degassing of dissolved carbon dioxide that was present in the reused acetone .
  - The possible presence of other contaminants in the reused acetone may also have contributed to cause catalysis of the decomposition.

See similar incident: <http://www.crhf.org.uk/incident57.html>



### Lessons Learned:

- The reuse of solvents can be dangerous and, should be avoided.
- Avoid using acetone when making dry ice cold baths. 2-Isopropanol or glycols is preferred.
- Wear eye protection at all times in the lab.

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