SAFETY BRIEF

Lessons Learned from the Chemical Exposure

Event: FENS 2107 Polymer Synthesis Laboratory-Chemical Exposure

Date: 24/05/2026

Category: Accident-Chemical Exposure

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Event:
Chemical splash exposure to the left eye during filtration of a polymer solution prepared in tetrahydrofuran (THF).

Description:
While performing a filtration experiment to polymer samples were dissolved in THF, a minor laboratory incident occurred. During filtration of the polymer–THF mixture using a syringe filter, pressure unexpectedly built up within the filtration assembly. As a result, the syringe tip and filter connection failed suddenly, causing the solvent-containing polymer solution to splash back toward the user.

Findings:

- The syringe tip and filter connection failed unexpectedly.
- THF-containing polymer solution splashed toward the user's face.
- The left eye was directly exposed to the chemical.
- Safety glasses were not worn during the experiment.
- The detached filter and syringe tip indicated mechanical failure of the filtration setup.

Lessons Learned:

- Appropriate eye protection must always be worn when handling chemicals and performing filtration experiments.
- Chemical hazards and emergency response procedures should be reviewed before beginning laboratory work.
- Laboratory users should be familiar with the location and use of eyewash stations and emergency equipment.
- Equipment integrity should be checked prior to use, especially when applying pressure.

Prevention Measures

Always wear safety glasses or chemical splash goggles during laboratory work. Contact lenses should be removed before handling hazardous chemicals whenever possible, as they may complicate emergency eye decontamination procedures.
Inspect syringes, filters, and connections before each experiment.
Verify the compatibility and condition of consumables before use.
Review the SDS/MSDS of all chemicals before conducting experiments.
When working during weekends or off-hours, inform a responsible person and work with a laboratory buddy whenever possible.
Follow laboratory safety procedures and risk assessment guidelines at all times.

Positive Response and Good Practices:

- The experiment was stopped immediately after exposure.
- The user promptly rinsed the affected eye using the laboratory eyewash station.
- Medical assistance was sought without delay.

Need additional resources?

For more information regarding laboratory safety, see the Laboratory Safety resources provided on the Lab Safety website Laboratory Safety | Faculty of Engineering and Natural Sciences.