Mistaken use of concentrated Hydrofluoric acid (HF) instead of N-Methyl-2-pyrrolidone (NMP)

This alert highlights the dangers of not carefully reading the information listed on a chemical bottle chemical bottle and the risks which can occur when such mistakes are made.

Background

During a routine experiment, a PhD student mistakenly used HF (Conc. 48 %) instead of the usual chemical for the process, NMP. When the HF started to produce fumes in the fume hood, the student realised their mistake and alerted their supervisor. The supervisor took necessary steps to deal with the situation including the use of decontamination procedures. *For further information on the nature of both chemicals please access CHEMALERT on the UNSW HS website*: http://www.ohs.unsw.edu.au/

No injuries were sustained in this incident

What was done well

- Student was trained and inducted into the lab
- Student was able to recognise a problem and take appropriate steps
- The lab has a well-developed strategy for working with HF including emergency management
- Student was wearing PPCE (but less than that required for HF work)

Contributing factors

· The student was able to access HF despite not being trained to work with HF

· The HF and the NMP both came from the same manufacturer, the bottles at an initial glance looked very similar as they were the same sized volume and had the same colouration (Lid and bottle; see Figure 1).

Figure 1: Bottle comparison between HF& NMP

Action required & specific control measures

Local areas must ensure their students and staff have a thorough understanding on the following:

1. **UNSW PROCEDURE:** How to read chemical label information – refer to the following:
   - HS429 Labelling of Hazardous Substances Guideline
   - Hazardous Substances

2. **BEING CAREFUL :** Stakeholders are reminded by supervisors/ lab managers during induction and training on the need to carefully take the time read the bottle information prior to use

3. **STORAGE :** Local areas should review their storage of HF and where practical, take steps to keep it either locked or physically located away from other chemicals (i.e. in a separate cabinet)

4. **EXTRA IDENTIFIERS:** Local areas are advised to take extra steps to put extra safety identifiers on their HF bottles to prevent misidentification

5. **TRAINING:** Any stakeholders working in a facility where HF is used should be formally trained in the hazards of HF and emergency management. This include local training (via RA'S & SWP'S) and the UNSW HF training course

Further information

Contact your Faculty WHS coordinator for further information:
http://www.ohs.unsw.edu.au/hs_contacts/index.html