

February 24, 2000  
Iowa State University  
Subject: ISU Yellow Alert- Hydrogen Fluoride Incident

**Title- ISU Yellow Alert- Hydrogen Fluoride Incident**

**Summary-** On January 25<sup>th</sup>, 2000, the ISU research community had another "close call." Two graduate students working in Gilman Hall were exposed to hydrogen fluoride gas due to an incident involving a small lecture bottle of hydrogen fluoride gas being used in a fume hood that was not operating. Though the outcome could have been much more serious, the students were fortunate that only one person suffered burns to the hand and forearm.

**Recommendations-** The following items, if they had been addressed properly, could have prevented the incident or at least minimized the injuries.

1. Standard Operating Procedures (SOPs) were not sufficiently developed to address the lab procedure. No health, safety or emergency information was included in the SOP being followed.
2. Neither student had received chemical-specific training on the hazards of hydrogen fluoride.
3. The fume hood housing the experiment was not working. In fact, cold air was blowing **out** of the fume hood. [A Kimwipe taped to the sash makes the improper airflow evident].
4. First aid kits were not available in the lab and kits across the hall did not contain calcium gluconate cream. This cream should be stocked in every lab where hydrogen fluoride is used. Calcium gluconate cream is available from Occupational Medicine (4-2056) for a nominal fee.
5. One of the students, who was supposed to be there only to observe the project, was not wearing the necessary personal protective equipment. When he offered assistance, he was exposed, resulting in burns to the hand and forearm.

SOPs are required by OSHA's Laboratory Safety Standard. These requirements are outlined in the ISU Chemical Hygiene Plan. Specifically, the Chemical Hygiene Plan states that you must have "standard operating procedures relevant to safety and health considerations which are to be followed when laboratory work involves the use of hazardous chemicals."

Lack of SOPs for laboratory procedures involving hazardous chemicals is the primary root cause of many laboratory accidents and is one of the most frequent violations of the OSHA Lab Standard on the ISU campus. To prevent additional laboratory accidents such as this, please review all laboratory SOPs to ensure they have appropriate and complete health, safety, and emergency information.

Please contact EH&S's Paul Richmond or David Wolff (294-5359) with any questions you may have about lab safety and/or the ISU Chemical Hygiene Plan.