



U. S. Chemical Safety and Hazard Investigation Board RECOMMENDATIONS STATUS CHANGE SUMMARY

Report:	Texas Tech University Chemistry Lab Explosion
Recommendation Number(s):	2010-5-I-TX-R2
Date Issued:	September 30, 2011 (released October 19, 2011)
Recipient:	American Chemical Society (ACS)
New Status:	Closed – Exceeds Recommended Action
Date of Status Change:	August 12 th , 2015

Recommendation Text(s):

Develop good practice guidance that identifies and describes methodologies to assess and control hazards that can be used successfully in a research laboratory.

Board Status Change Decision:

A. Rationale for Recommendation

On January 7, 2010, a graduate student within the Chemistry and Biochemistry Department at Texas Tech University (TTU) was severely injured after the chemical he was working with unexpectedly detonated. The CSB's investigation found that the physical hazards of the student's research were not effectively assessed and controlled, and that comprehensive hazard evaluation guidance for research laboratories did not exist. The non-profit American Chemical Society (ACS) has published several widely-accessed publications related to safety and health as it relates to chemistry; therefore, the Board recommended that ACS develop guidance for assessing and controlling hazards in research laboratories.

B. Response to the Recommendation

On May 28, 2015, the ACS published a draft second document: *Identifying and Evaluating Hazards in Research Laboratories: Guidelines developed by the Hazards Identification and Evaluation Task Force of the American Chemical Society's Committee on Chemical Safety.*¹

The scope of the ACS document indicates that it is intended for use for laboratory researchers “without deference to where they are in their careers” all with “varied approaches to learning and experimental design and who may require different kinds of assessment tools.”

The document identifies and describes in detail five different methodologies for “identification of hazards, analysis of the risks presented by each hazard [and] a selection of controls that will allow the work to be done safely”: Chemical Safety Levels/Control Banding, Job Hazard Analysis, What-if Analysis, Checklists and Structured Development of Standard Operating Procedures.

The document also addresses the variable nature of the work conducted within research laboratories and provides practical examples of changes that might require a hazard analysis, discusses factors that affect recognition of change and provides organizational strategies for ensuring recognition of, and appropriate response to, significant changes in research environments. Consistent with the CSB's case study, the

¹ Available at: <http://www.acs.org/content/dam/acsorg/about/governance/committees/chemicalsafety/publications/identifying-and-evaluating-hazards-in-research-laboratories.pdf>

document emphasizes the importance of both reporting and discussing “incidents, near misses, and close calls.” The ACS’s publication emphasizes the importance of striving for continuous improvement by identifying lessons learned during the course of work, and using lessons learned to inform future hazard evaluations.

C. Board Analysis and Decision

ACS’s document, *Identifying and Evaluating Hazards in Research Laboratories*, exceeds the CSB Recommendation No. 2010-05-I-TX-R2. The thoroughness of the publication, accompanied by the additional publication on safety culture, is beyond what the CSB requested in its recommendation. Therefore, the Board voted to change the status of the CSB’s Recommendation No. 2010-5-I-TX-R2 to: **“Closed- Exceeds Recommended Action.”**