

CLOSE ENCOUNTERS OF THE LAB KIND

THE SANTAYANA REPORT

George Santayana was a Spanish-American philosopher, essayist, poet, and novelist. In 1905, he penned the famous aphorism “those who cannot remember the past are condemned to repeat it.” More than a century later, the saying reverberates with professionals the world over. The following is a summary of a recent incident at Columbia University. The information presented is intended to provide awareness and help readers plan against the occurrence of a similar situation in their laboratory or work area.

It’s 10PM, do you know where *your* chemicals are?

An after-hours response to a chemical spill was further complicated when the contents of an improperly labeled, leaking chemical container were misidentified. A graduate student discovered a leaking container on the floor of their laboratory in the early evening, and upon closer inspection, noted that the container was labeled, but only with a few letters and not the full chemical name. Believing the label to be a chemical abbreviation or acronym, this information was forwarded to the Environmental Health & Safety (EH&S) personnel coordinating a response to the chemical spill. When EH&S responders arrived at the laboratory, the parties determined that the label was in fact a student’s initials and not a chemical abbreviation. The student to whom the chemical belonged was not present at the time and their emergency contact information was not available. As a result, response efforts were delayed several hours while identifying information for the contents of the leaking container was sought. Later that evening, Public Safety located the student and escorted them to the laboratory, where they were able to identify the chemicals leaking from the improperly labeled container and enable EH&S to safely perform the clean-up and successfully conclude the incident response.

Lessons Learned

- All laboratory containers must be legibly labeled in a way that allows the contents to be readily identified and include words, pictures, symbols, or a combination thereof, which provide at least general information regarding the hazards of the contents. For example, the standardized [pictograms, signal words, and hazard statements](#) recently defined in an update to the Occupational Safety and Health Administration’s (OSHA) hazard communication standard, which is based on alignment with the United Nation’s (UN) Globally Harmonized System for the Classification and Labeling of Chemicals (GHS), may all be used to convey hazard information on laboratory containers. It is important to emphasize that clear and consistent labeling not only keeps a laboratory compliant, but can also raise hazard awareness amongst personnel working independently of one another in the same laboratory space. Your [Research Safety Specialist](#) can assist by providing adhesive labels that include space for the name of the container contents and a listing of general hazard information.
- Prompt communication with the parties involved during a laboratory incident is vital to a safe and timely response. In this incident, neither the laboratory manager nor principal investigator (PI) had emergency contact information (e.g., mobile phone) for the student responsible for the leaking container.
- The student had not completed the University’s required [laboratory safety training](#) course prior to working in the laboratory and was unfamiliar with the University’s laboratory container labeling requirements.
- The leaking container was not compatible with the contents, a combination of hexane and dichloromethane. The solvents quickly deteriorated the sides of the polystyrene container and leaked out onto the floor. Always review container compatibility and chemical resistance with the container manufacturer prior to transferring a hazardous material from a stock bottle to a secondary container. Most container manufacturers will provide chemical resistance information on their website.