SPECIAL FEATURE SECTION: SAFETY OF CHEMICAL PROCESSES

Editorial

Safety Special Issue

This is the sixth successive annual special issue devoted to process safety issues, and I hope all enjoy reading it. This special issue is for all chemists and engineers, though, not just for safety professionals, and its aim is to disseminate information on safety which will impact on the chemical and allied industries, hopefully helping to prevent accidents and runaway incidents, which are still happening all too often as recent data from the Chemical Safety and Investigation Board (CSB) shows.

In the last 20 years there have been 167 serious reactive chemical accidents in the United States, and these accidents have killed 108 workers! Yes, 108 deaths! One would have thought with the amount of knowledge on runaway reactions that these incidents should no longer be occurring. The CSB continue to provide details of shocking recent incidents which are mostly in the chemical, as opposed to the pharmaceutical, industry. A recent incident at Synthron (Morgantown, NJ, U.S.A.), who used to manufacture acrylic polymers used in paints and coatings, involved increasing the batch size to meet a large order. The heat of reaction could not be controlled, thus resulting in a flammable explosion that killed a maintenance supervisor and injured 14 workers. The explosion destroyed the plant, a home, and two churches as well as the reputation of the chemical industry (for a video and further information on this incident see www.csb.gov). This incident was also highlighted last year in *Chem Eng. News* **2007**, *85* (August 6), 29.

A further runaway was reported in *Chem Eng. News* **2008**, *86* (January 14), 11, and involved a reaction using metallic sodium to make methylcyclopentadiene manganese tricarbonyl, an additive used to boost gasoline octane rating. A small company, T2 Laboratories, based in Jacksonville, Florida, had a runaway in a pressure reactor. When the vessel contents were ejected from the reactor, they ignited, releasing a large amount of heat. Four workers were killed and 12 more injured, a few days before Christmas last year. Debris was found a mile from the blast, and parts of the reactor, weighing hundreds of kilograms, were discovered 1 mile away. More details on this incident are available, with graphic photos, on the CSB Web site.

There is no excuse for ignorance, which is a contributing factor to most incidents. There is a vast body of literature on safety, and many training courses and help and advice are available from many sources, so it is puzzling why so many incidents occur. Poor management and cost cutting are also key factors.

Those of us based in Europe cannot afford to be complacent either. Unfortunately, many European authorities who investigate the incidents do not publish their findings as CSB does. When companies can hide behind the confidentiality issue, then the facts about the incident are hard to find, and lessons learned cannot be disseminated. CSB's Web site really should be an inspiration to others, and I would like to see similar Web sites from investigating authorities in Europe and Asia.

So, readers, please look at this Web site, read the articles in this special issue, and make a note to write up, or persuade your safety colleagues to write up, your work for the next *Org. Process Res. Dev.* special safety issue in Nov/Dec 2009. I hope and expect you will learn something new from each article.

After this special issue, Gerald Weisenburger will no longer be involved in producing the special section which includes the Safety Highlights. I thank him for his contributions over the last three years and wish him well in his new role at Pfizer. Paul Vogt continues to serve *Org. Process Res. Dev.*, despite a change of company, and we hope to have a new person lined up to replace Jerry in the near future.

Trevor Laird
Editor

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