



Pathology/Biology Section - 2016

H111 Emergency Management, Death Investigation, and Pathology of a Mass Fatality Industrial Workplace Accident: The La Porte, Texas, Dupont® Plant Incident

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After attending this presentation, attendees will better understand the emergency management response and death investigation response required to properly investigate and contain large-scale industrial accidents. This presentation will cover scene investigation, response, and pathologic findings in a methyl mercaptan leak.

This presentation will impact the forensic science community by increasing awareness of collaborative efforts between law enforcement, industrial agencies, and medical examiner offices in responding to multiple fatalities at chemical and industrial sites. This presentation will also shed light on a rare form of chemical asphyxia by methyl mercaptan.

The Harris County Institute of Forensic Sciences (HCIFS) provides forensic science services to all of Harris County and several adjoining county jurisdictions. Part of the county contains a large industrial complex that is part of the Houston Ship Channel. The Ship Channel and its related industries are home to several chemical industrial companies and their production plants. HCIFS sees many industrial workplace deaths every year, ranging from blunt trauma to asphyxia deaths.

In November 2014, a chemical leak occurred at a DuPont® production facility that was producing chemical pesticides. During the course of the leak and the subsequent evacuation, it was noted that several employees were not accounted for and were presumed dead inside the chemical facility.

In conjunction with Houston Fire Department, La Porte Police Department, and Channel Industries Mutual Aid, HCIFS mobilized an emergency response team in order to respond to the scene and assess the situation. By working with law enforcement and other government agencies, the Hazardous Materials (HAZMAT) situation was assessed and the decedents retrieved in an efficient and safe manner, without compromising the quality of the investigation. Coordination, communication, and collaboration with outside agencies was of paramount importance in order to ensure the safety of the investigative agencies and first responders.

The chemical that was of major concern was methyl mercaptan, which is an odorless agent used in propane preparation as well as in pesticide production. There were four deaths associated with this incident, all of whom were employees with the chemical plant. All decedents underwent full autopsies at HCIFS, and volatile toxicology testing was performed on all of the decedents. The cause of death in all of the decedents was “Asphyxia due to Exclusion of Oxygen,” the manner “Accidental.”

HCIFS worked with the National Chemical Safety Board in order to ascertain prior deaths due to methyl mercaptan and to assist with their investigation of the industrial plant. Information on a prior industrial accident involving methyl mercaptan was reviewed in order to ascertain proper toxicology testing and to help guide the forensic pathologist in determining pathologic findings.

By coordinating with first responders and HAZMAT teams for the investigation and decedent recovery, and with regulatory agencies during the examination and subsequent follow-up, HCIFS was able to successfully handle an industrial accident involving four decedents in a possibly dangerous recovery situation.

Forensic Emergency Management, Industrial Accidents, Death Investigation