

Case Study 21:
Fatal Equipment Rupture, Explosion, and Fire
at the KMCO Chemical Facility

On Tuesday, April 2, 2019, at 10:51 a.m., a flammable isobutylene vapor cloud exploded at the KMCO, LLC (“KMCO” pronounced “chem-co”) facility in Crosby, Texas. The event fatally injured one KMCO employee and seriously injured two others. At least 28 other workers were injured, including five KMCO employees and 23 contract workers.

The incident occurred while KMCO operations staff were making a batch of sulfurized isobutylene, a lubrication additive product. At 10:41 a.m., a fist-sized piece of metal broke away from the body of a 3-inch cast iron y-strainer in the batch reactor’s liquid isobutylene supply piping. KMCO’s operations staff succeeded in moving other workers out of the immediate area and preventing vehicle traffic from approaching the flammable vapor cloud. Operations team members entered the release area and manually closed valves. This stopped the flow of isobutylene, but more than 10,000 pounds had already been released. The operations team members also opened other valves, allowing firewater to spray throughout the batch reactor area.

These actions were mostly complete when the isobutylene vapor cloud suddenly exploded while two operators were still within the vapor cloud, and a shift supervisor was near it. The explosion fatally injured one of the operators; the other operator and the shift supervisor suffered serious burn injuries. After this accident KMCO filed for Bankruptcy.

References:

CSB report: “Fatal Equipment Rupture, Explosion, and Fire at the KMCO Chemical Facility”, published in December 2023