



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

<b>Report:</b>	Chemical Reaction, Hydrogen Release, Explosion, and Fire at AB Specialty Silicones
<b>Recommendation Number:</b>	2019-03-I-IL-R1
<b>Date Issued:</b>	September 24, 2021
<b>Recipient:</b>	AB Specialty Silicones, LLC
<b>New Status:</b>	Open - Awaiting Response or Evaluation/Approval of Response
<b>Date of Status Change:</b>	

### Recommendation Text:

*Develop hazardous gas detection and alarm programs and associated procedures based on manufacturer specifications, current codes, standards, and industry good practice guidance, for all hazardous gases that could be released near workers, including hydrogen. The program must address proper installation, calibration, inspection, maintenance, training, and routine operations. Ensure such hazardous gas detection and alarm systems are functional at all times.*

### Board Status Change Decision:

#### A. Rationale for Recommendation

On Friday May 3, 2019, a massive explosion and fire occurred at the AB Specialty Silicones (ABSS) facility in Waukegan, IL, that fatally injured four workers, destroyed the facility's production building, and caused extensive damage to nearby businesses.

The U.S. Chemical Safety and Hazard Investigation Board (CSB) investigated the incident and found that the explosion resulted from the ignition of hydrogen gas that was released during a process upset that occurred while mixing incompatible chemicals in a batch reactor vessel. The CSB determined that the causes of the incident were deficiencies in ABSS's operations, policies, and practices including its hazard analysis program, methods used to store and handle incompatible materials, its double initial procedure program, process safety culture weaknesses, and the lack of a safety management system addressing process safety. Contributing to the severity of the incident were ABSS's batch equipment and ventilation system design, the lack of a gas detection and alarm system, and ineffective emergency preparedness. As a result of these findings, the CSB issued three recommendations to ABSS. This status change summary addresses **CSB Recommendation No. 2019-03-I-IL-R1**.