



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

Report:	Chemical Reaction, Hydrogen Release, Explosion, and Fire at AB Specialty Silicones
Recommendation Number:	2019-03-I-IL-R2
Date Issued:	September 24, 2021
Recipient:	AB Specialty Silicones, LLC (ABSS)
New Status:	Closed – Acceptable Action
Date of Status Change:	July 27, 2022

Recommendation Text:

Establish a safety management system that addresses process safety at the AB Specialty Waukegan, Illinois facility. Include in that system elements recommended in industry guidance publications, including Center for Chemical Process Safety (CCPS) publications Guidelines for Risk Based Process Safety and Guidelines for Implementing Process Safety Management.

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-R2 (e.g., R2), which pertains to the lack of a safety management system.

B. Response to the Recommendation

In December of 2021, ABSS informed the CSB that it had received ISO 45001: 2018 certification of its Occupational Health and Safety Management System (OH&SMS) and that through that process, improvements were made in their risk-based process safety management. In addition to supplying the CSB with the certification, ABSS also provided sufficient

documentation to indicate that its OH&SMS addressed the elements listed in the CCPS publications referenced in the CSB recommendation.

C. Board Analysis and Decision

Based on the above actions taken by ABSS, the Board voted to change the status of CSB Recommendation No. 2019-03-I-IL-R2 to: “Closed – Acceptable Action.”