



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

Report:	Kuraray Pasadena Release and Fire
Recommendation Number:	2018-03-I-TX-R8
Date Issued:	December 21, 2022
Recipient:	Kuraray America, Inc.
New Status:	Closed – Acceptable Action
Date of Status Change:	February 2, 2024

Recommendation Text:

Strengthen the EVAL Plant's operator training program by 1) including the known activities, such as bringing ethylene back into the unit, upset conditions like the reactor's High-High-Pressure alarm, and providing guidance or otherwise clarifying when nonessential personnel should be excluded from being in the unit; 2) including alarm setpoints and actions that operators should take in response to specific process alarms, such as high pressure inside an EVAL Reactor; 3) including directions on when operators should use the emergency open valve; and 4) including safe operating limits, the consequence of deviating beyond the safe operating limits, and the predetermined steps operators need to take to return the process to a safe condition.

Board Status Change Decision:

A. Rationale for Recommendation

On the morning of May 19, 2018, the pressure relief devices of a reactor used to make ethylene and vinyl alcohol copolymer (EVAL) activated and discharged ethylene into the air through horizontally oriented discharge piping. The resulting flammable vapor cloud found a heat source and ignited. The fire burned for approximately three minutes until enough ethylene was released to reduce the pressure inside the reactor to allow the pressure relief valve to close. Kuraray America, Inc. (Kuraray) reported releasing 2,347 pounds of ethylene. Several workers sustained injuries resulting from the fire as well as from trying to escape the fire. Twenty-one injured workers were transported to off-site medical facilities for treatment. Additionally, two workers were life-flighted from the Kuraray facility.

The U.S. Chemical Safety and Hazard Investigation Board (CSB) investigated the incident and found several safety issues including failures in pressure-relief system discharge design, excluding non-essential personal during transient operations, and weakly implemented process safety management system elements. As a result of these findings, the CSB issued twelve recommendations to Kuraray. This status change summary addresses CSB Recommendation No. 2018-03-I-TX-R8.

B. Response to the Recommendation

Kuraray notified the CSB and provided supporting documentation that the company has updated its training manuals to strengthen the four items identified in this recommendation.

C. Board Analysis and Decision

Based upon the information above, the Board voted to change CSB Recommendation No. 2018-03-I-TX-R8 to: “Closed – Acceptable Action.”