



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

<b>Report:</b>	Kuraray Pasadena Release and Fire
<b>Recommendation Number:</b>	2018-03-I-TX-R11
<b>Date Issued:</b>	December 21, 2022
<b>Recipient:</b>	Kuraray America, Inc.
<b>New Status:</b>	Open – Acceptable Response or Alternate Response
<b>Date of Status Change:</b>	February 2, 2024

### Recommendation Text:

*Modify the EVAL Plant's safe operating limits program to prevent operating under conditions that rely upon equipment design safety factors, such as the American Society of Mechanical Engineers (ASME) code material safety factors.*

### 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 personnel 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-R11.

#### B. Response to the Recommendation

Kuraray notified the CSB that the company has revised its Safe Operating Limits and plans to revise its Safe Operating Limits Plant Process Equipment procedure. Once revisions are finalized and a copy of the updated procedure is sent to the CSB, the recommendation can be evaluated for closure.

C. Board Analysis and Decision

Based upon the information above, the Board voted to change CSB Recommendation No. 2018-03-I-TX-R11 to: “Open – Acceptable Response or Alternate Response.”