



## 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-R1
<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>	November 24, 2023

### Recommendation Text:

*Develop and implement an emergency pressure-relief system design standard to ensure that each of these safety systems will discharge to a safe location. Include a requirement to periodically evaluate the site's emergency pressure-relief systems and make appropriate modifications to ensure that each of these systems discharge to a safe location such that material that could discharge from these safety systems will not harm people.*

### 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 American, 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-R1.

#### B. Response to the Recommendation

Kuraray notified the CSB that the company has implemented a site-wide system to modify all emergency pressure-relief systems according to American Petroleum Institute (API) 521 to ensure discharge to a safe location. Kuraray provided the CSB with a timeline as to when all system modifications will be completed and stated that they added a periodic evaluation of the

EVAL site's pressure relief system. Once all updates have been completed, the CSB can evaluate this recommendation for closure.

C. Board Analysis and Decision

Based upon the information above, the Board voted to change CSB Recommendation No. 2018-03-I-TX-R1 to: "Open – Acceptable Response or Alternate Response."