



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

Report:	Yenkin-Majestic Paint and OPC Polymers Corporation
Recommendation Number:	2021-04-I-OH-R6
Date Issued:	November 30, 2023
Recipient:	American Petroleum Institute (API)
New Status:	Open – Awaiting Response or Evaluation/Approval of Response
Date of Status Change:	Not Applicable – Initial Status

Recommendation Text:

Develop specific design, construction, and alteration guidance for low-pressure process vessels in flammable and other highly hazardous chemicals service not exceeding an internal pressure of 15 psig in API 510 Pressure Vessel Inspection Code, API RP 572 Inspection Practices for Pressure Vessels, and/or other appropriate products. At a minimum, include guidance for:

- (i) determining and documenting the low-pressure vessel's design pressure (such as through a data sheet and a nameplate affixed to the vessel);*
- (ii) determining when or if all or parts of the ASME Boiler and Pressure Vessel Code should be applied;*
- (iii) acceptable alternative engineering methods, if applicable; and,*
- (iv) alteration requirements, such as design assessments, inspections, and pressure testing.*

Board Status Change Decision:

A. Rationale for Recommendation

On April 8, 2021, a flammable liquid mixture and its vapors became pressurized and then released through the seal of a closed manway of an operating kettle at the Yenkin-Majestic Paint Corporation (Yenkin-Majestic) OPC Polymers resin plant in Columbus, OH. The vapor spread throughout the facility, forming a flammable cloud which found an ignition source and exploded resulting in a fire.

One Yenkin-Majestic employee was fatally injured due to burns and smoke inhalation. This employee was found partially covered by rubble inside the second floor of the resin plant. Eight other employees were transported to area hospitals for treatment of their injuries, which included third-degree burns and limb fractures. One employee required a leg amputation after being crushed under debris.

As a result of the incident the severely damaged facility was demolished. Yenkin-Majestic estimated the total property damage from the incident to be over \$90 million. In addition to the

demolished facility, firefighting water runoff contaminated the nearby Alum Creek, and the Ohio Environmental Protection Agency reported observations of offsite impact through at least April 11, 2021.

The U.S. Chemical Safety and Hazard Investigation Board (CSB) investigated the incident and found several safety issues including ineffective guidance on mechanical integrity of low-pressure vessels, ineffective safeguard selection, and a lack of emergency preparedness. As a result of these findings, the CSB issued one recommendation to the American Petroleum Institute (API). This status change summary addresses **CSB Recommendation No. 2021-04-I-OH-R6**.