



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

Report:	Optima Belle LLC Explosion and Fire
Recommendation Number:	2021-02-I-WV-R1
Date Issued:	July 6, 2023
Recipient:	Optima Belle LLC (Optima Belle)
New Status:	Closed – Acceptable Action
Date of Status Change:	April 9, 2024

Recommendation Text:

Develop and implement a written thermal and reactive hazards evaluation and management program. The program should adhere to industry guidance provided in publications such as the Center for Chemical Process Safety's Essential Practices for Managing Chemical Reactivity Hazards. At a minimum, the program should identify the process that Optima Belle will use to manage chemical reactivity hazards, resources for collecting and assessing reactivity hazards, steps for determining how and when to test for chemical reactivity, documentation requirements, and training.

Board Status Change Decision:

A. Rationale for Recommendation

On December 8, 2020, a metal rotary cone double dryer containing a chlorinated isocyanurate compound (trade name CDB-56®) exploded following a decomposition reaction that resulted in a fire and toxic chlorine release at the Optima Belle LLC (Optima Belle) facility in Belle, West Virginia. The explosion occurred while Optima Belle, a toll manufacturer, was dehydrating CDB-56® on behalf of Clearon Corporation through a contractual agreement with Richman Chemical Inc.

One Optima Belle employee was fatally injured in the explosion, two others were evaluated for respiratory irritation, and one member of the public reported a minor leg injury. Debris from the explosion was found almost a half-mile from the incident. Local authorities issued a shelter-in-place order for a two-mile radius for over four hours. The facility experienced an estimated \$33.1 million in property damage.

The U.S. Chemical Safety and Hazard Investigation Board (CSB) investigated the incident and found several safety issues including ineffective process knowledge management, a lack of thermal hazard assessment, ineffective selection of process equipment, shortcomings in industry practices related to tolling hazardous materials, and a lack of regulatory coverage of reactive hazards under the Occupational Safety and Health Administration's (OSHA's) Process Safety Management standard (PSM) and the Environmental Protection Agency's (EPA's) Risk Management Program rule (RMP). As a result of these findings, the CSB issued four

recommendations to Optima Belle LLC (Optima Belle). This status change summary addresses CSB Recommendation No. 2021-02-I-WV-R1.

B. Response to the Recommendation

Optima Belle notified the CSB that they have implemented a written program for evaluating and managing thermal and reactive hazards. Upon review of the relevant documentation and procedures provided, the CSB concluded that Optima Belle's actions satisfy all elements of the recommendation.

C. Board Analysis and Decision

Based upon the information above, the Board voted to change CSB Recommendation No. 2021-02-I-WV-R1 to: "Closed – Acceptable Action."