



U. S. Chemical Safety and Hazard Investigation Board

RECOMMENDATION STATUS CHANGE

SUMMARY

Report:	Foundation Food Group Fatal Chemical Release
Recommendation Numbers:	2021-03-I-GA-R2 2021-03-I-GA-R3
Date Issued:	December 11, 2023
Recipient:	Messer LLC
New Status:	R2: Open – Acceptable Response or Alternate Response R3: Open – Acceptable Response or Alternate Response
Date of Status Change:	March 16, 2026

Recommendations Text:

2021-03-I-GA-R2

Update the company product stewardship policy to:

- a) include participation by Messer in customers' process hazard analyses (PHAs). The policy should require that these PHAs be conducted in a manner which conforms with CCPS Guidelines for Hazard Evaluation Procedures prior to the startup of a cryogenic freezing process;*
- b) require verification that proper signage, in accordance with CGA P-76 Hazards of Oxygen-Deficient Atmospheres, is displayed on and/or near equipment; and,*
- c) require a facility and/or equipment siting review to ensure that emergency shutoff devices, including E-stops, are located such that they can be safely actuated during a release of liquid nitrogen.*

2021-03-I-GA-R3

Create an informational product that provides Messer customers with information on the safety issues described in this report. In this informational product, recommend that Messer customers develop and implement effective safety management systems to control asphyxiation hazards from inert gases based on the guidance published in CGA P-86 Guideline for Process Safety Management, CGA P-12 Guideline for Safe Handling of Cryogenic and Refrigerated Liquids, CGA P-18 Standard for Bulk Inert Gas Systems, and CGA P-76 Hazards of Oxygen-Deficient Atmospheres.

Board Status Change Decision:

A. Rationale for Recommendation

On January 28, 2021, liquid nitrogen overflowed from an immersion freezer located inside Plant 4 at the Foundation Food Group (FFG) facility in Gainesville, GA. The release occurred while

two maintenance employees were troubleshooting the equipment. Once the liquid nitrogen was released, it quickly vaporized and accumulated inside the room in which the equipment was located, creating an oxygen deficient atmosphere.

The two maintenance employees were fatally injured. Upon discovering the two fatally injured employees, an emergency response was initiated which included attempts by other employees to rescue them and isolate the freezer from its liquid nitrogen source. During these activities, four additional employees of FFG were fatally injured. Additionally, three more FFG employees and one firefighter were seriously injured, presenting symptoms of oxygen deprivation. The incident resulted in an estimated \$1.95 million in damage.

The U.S. Chemical Safety and Hazard Investigation Board (CSB) investigated the incident and found several safety issues including faulty equipment design, inadequate precautions for using liquid nitrogen, the lack of atmospheric monitoring and alarms, inadequate emergency preparedness, a lack of a safety management system, and a lack of regulatory coverage for cryogenic asphyxiants. As a result of these findings, the CSB issued two recommendations to Messer LLC. This status change summary addresses CSB Recommendation No. 2021-03-I-GA-R2 and CSB Recommendation No. 2021-03-I-GA-R3.

B. Response to the Recommendation

Messer has notified the CSB that they intend to implement the recommendation. They have provided a plan of action that appears to satisfy the objectives of the recommendation. Additionally, they have provided a date for completion.

C. Board Analysis and Decision

Based upon the information above, the Board voted to change CSB Recommendation Nos. 2021-03-I-GA-R2 and 2021-03-I-GA-R3 to: “Open – Acceptable Response or Alternate Response.”