U.S. Chemical Safety and Hazard Investigation Board

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October 1, 2024

EPA Docket Center
WJC West Building, Room 3334
1301 Constitution Avenue NW
Washington, DC 20004
(Via Federal eRulemaking Portal://www.regulations.gov/)

Re: Docket Number EPA-HQ-OPPT-2023-0606

Dear Sir or Madam:

Enclosed are the U.S. Chemical Safety and Hazard Investigation Board's (CSB) comments in response to the EPA's Notice entitled, *Public Engagement Webinars; Pre-Prioritization and Consideration of Existing Chemical Substances for Future Prioritization Under the Toxic Substances Control Act (TSCA)* (Docket Number EPA-HQ-OPPT-2023-0606). As a result of multiple investigations involving highly toxic hydrofluoric acid and hydrogen fluoride (HF), the CSB urges the EPA to initiate prioritization under TSCA to evaluate whether HF is a High-Priority Substance for risk evaluation.

We thank you for this opportunity to provide comments. If you have any questions or need further information regarding these comments, please contact Mr. Charles B. Barbee, Director of Recommendations at (202) 380-7122, or via email: CSBRecommendations@csb.gov.

Sincerely,

Steve Owens
Chairperson

Sylvia E. Johnson, Ph.D.
Board Member

Catherine J.K. Sandoval
Board Member

Enclosure

Cc: Stephen J. Klejst, Executive Director – Investigations & Recommendations, CSB

Introduction:

The U.S. Chemical Safety and Hazard Investigation Board (CSB) is an independent federal agency charged with investigating, determining, and reporting to the public in writing the facts, conditions, circumstances and cause or probable cause of any accidental chemical release resulting in a fatality, serious injury, or substantial property damage. The CSB issues safety recommendations based on data and analyses from investigations and safety studies and advocates for these changes to prevent the likelihood of recurrence. CSB safety recommendations also aim to minimize the consequences of accidental chemical releases.

The CSB submits the following comments in response to the U.S. Environmental Protection Agency's (EPA) Notice entitled, *Public Engagement Webinars; Pre-Prioritization and Consideration of Existing Chemical Substances for Future Prioritization Under the Toxic Substances Control Act (TSCA)*, published in the Federal Register on August 28, 2024.

As a result of multiple investigations involving highly toxic hydrofluoric acid and hydrogen fluoride (HF), the CSB urges the EPA to initiate prioritization under TSCA to evaluate whether HF is a High-Priority Substance for risk evaluation.

CSB HF Investigations

In recent years, the CSB has investigated several incidents where HF was released or a near miss occurred, which had the potential to cause serious off-site consequences to surrounding communities. The CSB also is currently investigating several releases of HF that occurred at a single facility over several years, one of which resulted in a fatality and another a serious injury.

ExxonMobil Refinery (Torrance, California)

On February 18, 2015, an electrostatic precipitator (ESP) in the fluid catalytic cracking (FCC) unit at the former ExxonMobil refinery in Torrance, California, exploded and spewed debris that nearly hit two tanks containing modified HF. FCC catalyst dust was dispersed throughout the nearby community as a result of the explosion, and while no HF was released, the event raised significant concerns in the community about the potential impact of an HF release at the facility.

Husky Superior Refinery (Superior, Wisconsin)

On April 26, 2018, two vessels in the FCC unit at the Husky Superior Refinery in Superior, Wisconsin, exploded, propelling metal fragments throughout the facility that punctured a nearby asphalt storage tank at the refinery and resulted in a serious asphalt fire. An HF storage tank, which was located closer to the explosion than the asphalt storage tank, could have been punctured by the debris from the explosion. Over 2,500 residents located in an evacuation zone two miles north, three miles to the east and west, and 10 miles south of the refinery in the City of Superior were evacuated from their homes as a precautionary measure because of concern about a potential compromise of the refinery's HF equipment. The City of Duluth, Minnesota, also issued a shelter in place order due to the potential risk of a release of highly toxic HF from the

refinery. As a result of this incident, the CSB issued the following recommendation to the U.S. Environmental Protection Agency (EPA):

CSB Recommendation No. 2018-02-I-W-12

Develop a program that prioritizes and emphasizes inspections of FCC units at refineries that operate HF alkylation units (for example, under EPA's National Compliance Initiative called Reducing Risks of Accidental Releases at Industrial and Chemical Facilities). As part of this program, verify FCC unit safeguards that prevent explosions during transient operation (including startup, shutdown, standby, and emergency procedures). At a minimum, the program will verify the following specific safeguards:

a) Implementation of the reactor barrier, or a similar inert gas flow, to maintain an inert barrier at an elevated pressure between the main column (containing hydrocarbon) and the regenerator (containing air);
b) Purging the main column with a non-condensable gas as needed to prevent a dangerous accumulation of oxygen in the main column overhead receiver;
c) Monitoring to ensure that there is a sufficient non-condensable gas purge of the main column to prevent a dangerous accumulation of oxygen in the main column overhead receiver (either through direct measurement of the oxygen concentration and/or through engineering calculation);
d) Monitoring of critical operating parameters for flows, pressures, pressure differences, and catalyst levels;
e) Documentation of consequences of deviating from the transient operation safe operating parameters and of predetermined corrective actions; and
f) Inclusion of the above items in the appropriate FCC operator training curricula.

This recommendation is in addition to the recommendations to EPA relating to hydrofluoric acid outlined in the CSB's report on the 2019 fire and explosions at the Philadelphia Energy Solutions refinery. In that report, the CSB recommended (1) that the EPA prioritize inspections of refinery HF alkylation units to ensure units are complying with API good practice guidance, (2) to require petroleum refineries with HF alkylation units to evaluate inherently safer technology, and (3) to initiate prioritization and, as applicable, risk evaluation of HF under the Toxic Substances Control Act.

PES Refinery (Philadelphia, Pennsylvania)

On June 21, 2019, a pipe elbow ruptured in the Philadelphia Energy Solutions (PES) HF alkylation unit at the PES refinery in Philadelphia, Pennsylvania, resulting in a large vapor cloud that engulfed part of the unit and ignited two minutes after the start of the release, causing a large fire. Three explosions occurred shortly thereafter. PES estimated that over 5,200 pounds of highly toxic HF were released during the event, in addition to roughly 676,000 pounds of hydrocarbons. PES estimated that 3, 271 pounds of HF released to the atmosphere, while the other 1,968 pounds of HF were contained by water spray within the unit and processed in the refinery's wastewater treatment plant. Fortunately, due in part to favorable wind conditions, the surrounding community was not harmed by the HF release. Had the HF release traveled beyond

the refinery boundary, however, there could have been significant adverse impacts to the community. The incident resulted in an estimated property damage loss of $750 million and ultimately led to the facility closing.

The CSB's investigation report on the PES incident noted that HF is a highly toxic chemical that can produce a vapor cloud upon release and is one of the eight most hazardous chemicals regulated under the EPA's Risk Management Program (RMP) rule. The CSB therefore concluded that the EPA should initiate prioritization under TSCA on HF, and if HF is determined to be a High-Priority Substance, the EPA should conduct a risk evaluation of HF, and implement any identified corrective actions, as required under TSCA. As a result of this conclusion, the CSB issued the following recommendation to the EPA:

CSB Recommendation No. 2019-04-I-PA-3:

Per the requirements in EPA Rule, Procedure for Prioritization of Chemicals for Risk Evaluation Under the Toxic Substances Control Act, initiate prioritization to evaluate whether hydrofluoric acid is a High-Priority Substance for risk evaluation. If it is determined to be a High-Priority Substance, conduct a risk evaluation of hydrofluoric acid to determine whether it presents an unreasonable risk of injury to health or the environment. If it is determined to present an unreasonable risk of injury to health or the environment, apply requirements to hydrofluoric acid to the extent necessary to eliminate or significantly mitigate the risk, for example by using a methodology such as the hierarchy of controls.

Honeywell Performance Materials (Geismer, Louisiana)

Finally, the CSB is currently investigating multiple incidents involving releases of HF at the Honeywell Performance Materials and Technologies (Honeywell) facility in Geismar, Louisiana. On June 7, 2024, a release of HF at the facility seriously injured one worker. On January 23, 2023, a reboiler at the facility catastrophically exploded, leading to the release of 871 pounds of hydrogen fluoride gas (it is hydrofluoric acid when dissolved in water), as well as 1,684 pounds chlorine gas, and other process fluids. A complex-side wide shelter-in-place was initiated at the facility, and local officials closed nearby highways. In connection with these two incidents, the CSB also is reviewing another incident that occurred at the facility on October 21, 2021, in which an employee died after being exposed to HF on unprotected areas of his face, ear, and neck when a gasket in piping at the facility catastrophically failed.

Conclusion

Considering the number of incidents investigated by the CSB where HF was released or a near miss occurred, the CSB urges the EPA to initiate prioritization under TSCA to evaluate whether HF is a High-Priority Substance for risk evaluation.