


Division of Air Quality

December 1, 2020

MEMORANDUM

To: Heather Carter, Fayetteville Regional Supervisor

From: Gary L. Saunders, Stationary Source Compliance Branch 

Subject: The Chemours Company – Fayetteville Works
Fayetteville, Bladen County, North Carolina
Facility ID. No. 0900009, Permit No. 03735T47
Performance Testing for HFPO Dimer Acid (GenX) Conducted on February 19-20, 2020 at Vinyl Ethers South (VES) Carbon Bed by Weston Solutions, Inc.
Tracking No. 2020-291ST

Summary of HFPO Dimer Acid Test Program

Sources Tested

On February 19-20, 2020, emissions testing was conducted on the Vinyl Ethers South Carbon Adsorber located at the Vinyl Ethers South (VES) process area. The VES carbon bed controls fugitive emissions collected from the enclosed areas of VES (sometimes referred to as “room air”). Process emission gases from various reaction vessels and unit operations in the VES process area are vented to the thermal oxidizer which reduce emissions of GenX (HFPO Dimer Acid) and its precursors (HFPO Dimer Acid Fluoride). These process emissions are not part of this testing. Although the VES can produce perfluoro propyl vinyl ether (PPVE), the VES area is be used to produce perfluoro methyl vinyl ether (PMVE) and perfluoro ethyl vinyl ether (PEVE). During the testing, the HFPO process was operating and the VES process was producing PMVE and PEVE.

Sampling Method

Testing was conducted using a modified EPA Method 0010 found in the SW-846 compendium of *Test Methods for Evaluating Solid Waste: Physical/Chemical Methods*. This sampling train is a variation of the EPA Reference Method 5 found in 40 CFR 60, Appendix A. The Method 0010 train extracts a sample isokinetically from the gas stream, passes the sample through a temperature-controlled filter, through a temperature-controlled condenser and into a series of XAD-2 resin “traps” and impingers to capture and collect the materials that passed through the filter. The test method is designed to capture certain particulate and condensable materials for later recovery and analysis.

After sample recovery, the samples were sent to Chemours’ contractor, Test America’s laboratory in Denver, Colorado. GenX was extracted from the resin traps. The DAQ required split samples after extraction to be submitted for independent analysis. This summary of results only addresses the results provided by Test America for Chemours. Laboratory analysis and quantification was performed using a liquid chromatography column and a dual mass spectrometer (LC/MS/MS).

Test Results

The reported GenX test results reflect corrected emission rates accounting for dilution and spike recovery values.

Vinyl Ethers South Test Results

GenX emissions testing of the VES carbon bed adsorber was conducted on February 19-20, 2020 while VES was producing PMVE and PEVE. Each run was conducted under normal operating conditions.

Each sampling run was nominally 90 minutes in length. The sample analysis data indicated the sampling train captured the HFPO Dimer Acid (GenX) before the second XAD-2 trap. The per run emission rate, removal efficiency, and averages are displayed in the table below.

Table 1. Summary of Carbon Bed Test Results for VES on February 19-20, 2020

Run Number	HFPO Dimer Acid Emission Rate		Efficiency
	Inlet (lb/hr)	Outlet (lb/hr)	%
1	8.48E-04	1.21E-04	85.7
2	3.82E-04	1.18E-04	69.2
3	2.26E-04	1.12E-04	50.5
Average	4.85E-04	1.17E-04	62.7

Summary and Conclusions

NC DAQ staff members were on site during source testing. DAQ staff observed the source test teams, the sample recovery and the process operations. Based upon the onsite observation of the testing and review of the test report, NC DAQ concludes that the testing was conducted in accordance to the modified testing protocol submitted by Chemours and that the analytical results appear representative of the stack conditions and process operations during the testing.

Cc: Central Files – Bladen County
IBEAM Documents - 0900009