DEPARTMENT OF ENVIRONMENTAL QUALITY
AIR QUALITY DIVISION
ACTIVITY REPORT: On-site Inspection

P058359696

FACILITY: FoamPartner Americas, Inc.(formerly Otto bock)		**SRN / ID:** P0583
LOCATION: 2923 TECHNOLOGY DRIVE, ROCHESTER HLS		**DISTRICT:** Warren
CITY: ROCHESTER HLS		**COUNTY:** OAKLAND
CONTACT: Steve Foote , Plant Manager		**ACTIVITY DATE:** 09/02/2021
STAFF: Adam Bognar	**COMPLIANCE STATUS:** Non Compliance	**SOURCE CLASS:** SM OPT OUT
SUBJECT: Scheduled Inspection		
RESOLVED COMPLAINTS:		

On Thursday, September 2, 2021, Michigan Department of Environment, Great Lakes, and Energy-Air Quality Division (EGLE-AQD) staff, I, Adam Bognar, conducted a scheduled inspection of FoamPartner Americas, Inc (the "Facility" or "Foampartners") located at 2923 Technology Drive, Rochester Hills, MI. The purpose of this inspection was to determine the facility's compliance status with the Federal Clean Air Act; Article II, Part 55, Air Pollution Control of Natural Resources and Environmental Protection Act, 1994 Public Act 451; Michigan Department of Environment, Great Lakes, and Energy-Air Quality Division (EGLE-AQD) rules; and Permit to Install No. 207-14A.

I arrived at the facility at around 10 am. I met with Mr. Steve Foote, Plant Manager. I identified myself and stated the purpose of the inspection. Due to the ongoing COVID-19 pandemic, an in-office record review was conducted rather than an on-site record review. I requested records via email prior to this inspection. We reviewed some of the records while on-site so that I could better understand their spreadsheets. Mr. Foote provided all of the requested records to me on September 2, 2021.

These records are available on the AQD shared drive at the following address: S:\Air Quality Division\STAFF\Bognar, Adam\Inspection Documents\FoamPartners FY2021

FoamPartners manufacturers foam products using Reaction Injection Molding (RIM) technology. The facility began operating at this location in April 2011. There are between 40 and 45 employees that operate this facility 5 days a week. Most of the work is done 1st shift. Certain lines are operated on a more limited basis during 2nd and 3rd shift. Mr. Foote stated that the business is having a hard time hiring new employees. Currently, most of their products are made for the automotive or fitness industry.

Isocyanates (MDI) and polyols are the primary raw materials. The RIM process is similar to injection molding process where hot plastic material is injected into a mold, allowed to cool, and then is removed from the mold. In RIM, the difference is that instead of injecting molten plastic into the mold, a mixture of polyols and MDI is poured into the mold. The polyols and MDI undergo a chemical reaction within the mold, causing the two materials to polymerize and harden.

Each RIM line has its own material supply station. Chemical usage is tracked through a programmable logic controller. The two components (polyols + MDI) are mixed in a mix head and poured into the mold. A mold release solvent is applied by hand via sprayer to the mold to facilitate removal of the workpiece. This mold release solvent is usually solvent based; however, Mr. Foote stated that the facility has converted approximately 20% of mold release usage from solvent based to water based release agents. FoamPartners ideally wants to phase out solvent borne mold release agents over time. All new projects will likely use the waterborne mold release agent.

Certain workpieces receive paint spray coating after hardening. This is performed in the same way and in the same location that the mold release agent is applied. Particulate emissions from the mold release agent spraying and paint spraying are controlled by dry filters. Spray coatings are only used on EUPOLY1, EUPOLY4, EUPOLY5, and EUPOLY7 per PTI No. 207-14A.

After the workpiece is cured and removed from the mold, the workpiece is manually trimmed to remove excess polymer. The mold is cleaned by blasting with dry ice as needed.

The raw materials are received in totes or through bulk delivery to a warehouse across the street. The storage warehouse across the street was leased by FoamPartners in 2017 or 2018 (2000 Technology Drive, Rochester Hills, MI). I verified that this warehouse is only used for raw material storage. This material was previously stacked up to the ceiling in the manufacturing warehouse. The new warehouse was purchased to free up additional space in the manufacturing plant and to reduce the risk of catastrophic fire.

No new air emissions generating manufacturing equipment has been installed since the previous AQD inspection in 2016. There are ten RIM lines in operation.

Emissions from the RIM process itself are expected to be small since the diisocyanates are expected to completely react with the polyols to produce the polyurethane.

PTI No. 207-14A

FGPOLYFOAM
This emission unit consists of ten reaction injection mold lines.

Section I – SC 1: Limits combined VOC, acetone, and methyl acetate emissions to 89.7 tons per year. 12-month rolling totals are not calculated correctly on the submitted records. Instead of summing the previous 11 months plus the current month to get the 12-month rolling total, FoamPartners multiplied the total VOC emissions for each month by 12 to get a "projected 12-month total". Additionally, FoamPartners needs to provide combined VOC, Methyl acetate, and acetone emissions on a 12-month rolling time period. I requested updated 12-month rolling emission records from FoamPartners.

AQD will not issue a violation notice for this recordkeeping discrepancy so long as FoamPartners provides AQD with an updated calculation for the 12-month rolling totals in a timely manner. FoamPartners provided all of the necessary data to calculate the 12-month rolling totals accurately. Furthermore, their approach to calculating the 12-month totals results in even higher calculated emissions than when calculated correctly.

I reviewed records from January 2020 through August 2021. The highest projected 12-month VOC emission rate is in August 2021 at 66.2 tons per year. This number is calculated by summing the tons of VOC emitted in August by 12 (5.51 tons x 12 months = 66.2 tons). VOC emissions were reported highest in August compared to any other month since January 2020.

Projected rolling 12-month methyl acetate and acetone are both 0 for August 2021. The highest projected 12-month methyl acetate usage is 1.7 tons in February 2020. Projected rolling 12-month acetone usage was highest in February 2020 at 0.21 tons. Neither acetone or methyl acetate have been used since March 2021.

Section I – SC 2: Limits VOC emissions from EUPOLY6 to 50 tons per year. The highest projected 12-month rolling total for EUPOLY6 was during March 2021 at 20.16 tons.

Section I – SC 3: Limits VOC emissions from EUPOLY2, EUPOLY3, and EUPOLY5 to 47 tons per year. The highest projected 12-month rolling total for these three emission units combined was in March 2021 at 34.44 tons.

Section I – SC 4: Limits VOC emissions from EUPOLY7, EUPOLY9, and EUPOLY10 to 43 tons per year. The highest projected 12-month rolling total for these three emission units combined was in January 2020 at 5.88 tons.

Section I – SC 5: Limits VOC emissions from EUPOLY1 and EUPOLY8 to 36 tons per year. The highest projected 12-month rolling total for these two emission units combined was in November 2021 at 0.6 tons.

Section I – SC 6,7: Limits DMF emissions. DMF has not been used at this facility since March 2021. After some trial and error, FoamPartners was able to completely eliminate this HAP from their solvent based paint. The

facility provided daily DMF usage data for the periods prior to removing it from the facility. This data shows compliance with the lb/day emission limits.

Section II – SC 1,2: Limits VOC content of paint coatings to 6.5 lb VOC/gallon (minus water as applied) and the VOC content of mold releases to 6.4 lb VOC/gallon (minus water as applied). FoamPartners provided Safety Data Sheets for the chemicals used at their facility.

FoamPartners has eliminated solvent based paint coatings from their facility. The highest VOC content of the new water based coatings used is 0.08 lb VOC/gallon. Solvent based mold release is still used. Around 20% of mold release use has been converted to water base. New projects will likely utilize water based mold release agents. The highest VOC content of the mold releases used is 6.24 lb VOC/gallon (Chem-Trend PU-11378).

Section III – SC 1: States that the permittee shall capture all waste materials and store them in closed containers. Waste materials were stored in closed containers. I did not observe any open waste containers/buckets during my inspection.

Section III – SC 2: States that the permittee shall dispose of spent filters in a manner which minimizes the introduction of air contaminants to the outer air. Air filters are bagged and thrown into the dumpster. This appears to be an acceptable practice.

Section III – SC 3: States that the permittee shall handle all VOC and/or HAP containing materials in a manner to minimize the generation of fugitive emissions. All chemicals and waste coatings were stored in sealed containers. There are few transfer operations because most chemicals are piped directly to the station where they are used.

Section III – SC 4: States that the permittee shall only apply paint coatings on EUPOLY1, EUPOLY4, EUPOLY5, EUPOLY7, and EUPOLY8. EUPOLY1 and EUPOLY5 shall only apply paint coatings if EUPOLY4 and/or EUPOLY7 are not operating. FoamPartners ensures compliance with this condition by only applying paints on the allowed lines and not running each line every shift such that a restricted combination of RIM lines are not operated. Mr. Foote expressed interest in getting this condition changed/removed in a future PTI revision. This may be possible now that solvent based paint coatings are not used.

Section III – SC 5: States that the permittee shall not apply any paint coatings containing dimethylformamide on EUPOLY5 and EUPOLY7. Dimethylformamide is no longer used at the facility as of March 2021. Based on the records I reviewed, DMF was not used in these emission units prior to being discontinued.

Section IV – SC 1: Requires the permittee to use HVLP applicators when applying spray coatings to parts. I verified that these types of applicators are used and that test caps are available for pressure testing.

Section IV – SC 2: States that the permittee shall not operate FGPOLYFOAM unless all respective exhaust filters are installed, maintained, and operated in a satisfactory manner. Exhaust filters were installed. Mr. Foote stated that the filters are changed as needed but generally every week. These filters are responsible for capturing overspray from both paint coating spray and from mold release spray.

Section V – SC 1: Requires the permittee to determine the VOC content of any paint coating using federal Reference Test Method 24. Alternatively, the permittee may submit a request to the AQD district supervisor asking to use manufacturers formulation data instead of performing a Method 24 analysis on each coating. FoamPartners submitted this request to the AQD on August 30, 2021. AQD accepted this request on September 7, 2021. Previously, the AQD allowed FoamPartners to use formulation data without performing a Method 24 analysis or receiving this approval. Solvent based paint coatings are no longer used at this facility.

Section VI – SC 1,2,3,4: Specifies recordkeeping requirements for FoamPartners. Mr. Foote provided all of the records I requested. These included safety data sheets of all paints/mold releases, VOC/acetone/methyl acetate emission rates of each emission unit on a monthly basis, gallons of material used in each emission unit, and dimethylformamide usage records. As discussed above, AQD is requiring FoamPartners to revise their 12-month

rolling calculations. 12-month rolling totals are currently calculated incorrectly, but I was able to get the data I needed to evaluate compliance from the submitted records.
Section VIII – SC 1 through 10: Specifies stack parameters. I did not evaluate stack dimensions during this inspection. The stacks I observed appeared to be exhausted vertically upwards unobstructed.

FGFACILITY
Section I – SC 1,2,3: Limits individual HAP emissions to 9 tons per year, aggregate HAP emissions to 22.5 tons per year, and VOC emissions to 90 tons per year. The highest projected 12-month HAP emissions was during February 2020 at 3.37 tons. The highest projected 12-month VOC emissions were during August 2021 at 66.2 tons.

Section II – SC 1: Limits the production of VOC containing materials to 258,500 lb/year. The highest projected 12-month VOC containing material usage was in August 2021 at 216,588 lbs.

Section V – SC 1: States that the permittee shall determine the HAP content of any materials as received and as applied using manufacturer's formulation data. FoamPartners uses manufacturers formulation data to determine HAP content of materials.

Section VI – SC 1,2,3: Specifies recordkeeping requirements for FGFACILITY. Foampartners keeps records of the amount of each HAP containing material used and the HAP content of each material used. This data is used to calculate the monthly and projected 12-month rolling totals. As discussed previously, AQD is requiring FoamPartners to revise their 12-month rolling records.

VOC usage/emission records are maintained. See discussion under FGPOLYFOAM Section VI – SC 1,2,3,4. FoamPartners does not account for any VOC or HAP materials reclaimed.

Mr. Foote stated that there are no cold cleaners or emergency generators at this facility.

Compliance Determination
FoamPartners Americas, LLC. must revise their 12-month rolling emission records. Calculating these values by multiplying each month by 12 is a conservative but incorrect approach. 12-month rolling totals must be calculated by summing the current month values with the previous 11 month's values.

FoamPartner Americas, LLC. appears to be operating in compliance with all other requirements of the federal Clean Air Act; Part 55, Air Pollution Control, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended (Act 451); Michigan Department of Environment, Great Lakes, and Energy-Air Quality Division (EGLE-AQD) Administrative Rules; and Permit to Install No. 207-14A.

NAME Adam Bogren DATE 9/21/2021 SUPERVISOR K. Kelly