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

P058366401

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:** 10/25/2022
STAFF: Iranna Konanahalli	**COMPLIANCE STATUS:** Compliance	**SOURCE CLASS:** SM OPT OUT
SUBJECT: FY 2023 scheduled inspection of FoamPartner Americas, Inc. ("FoamPartner"), fka Otto Block Polyurethane Technologies, Inc. ("Otto Block"),		
RESOLVED COMPLAINTS:		

FoamPartner Americas, Inc.(formerly Otto Bock) (P0583)
2923 Technology Dr.
Rochester, MI 48309-3589

The company Info: Otto Bock Polyurethane Technologies, Inc. (U-63-12-0026). Otto Bock, a Germany-based private company, started Rochester Hills operations in April 2011 with State of Michigan's credits worth $675,656. The German Otto Bock specializes in orthopedic, furniture, automotive parts, etc. applications for polyurethane foam. Global Otto Boack has sales of 629 Euros and employs about 4,787 employees (CY 2010). At Rochester Hills, Otto Bock started in April 2011 with a prototype injection machine. Recticel Interiors North America, L.L.C. of Auburn Hills produces polyurethane foams for the furniture, industrial, insulation, and automotive industries. The Company offers insulation products, bedding, flexible foams, and components for car interior trim. Recticel Interiors North America is based in Clarkston, Michigan. AQD inspected Recticel Interiors North America, LLC. (N7573) on April 06, 2011 (Violation Notice (VN dated April 12, 2011) and Otto Bock Polyurethane Technologies, Inc. (U-63-12-0026) on January 30, 2012). Based upon the e-mail address, FoamPartner is associated with Recticel. About April 2021, Recticel Flexible Foams and FoamPartner merged to form the Recticel Engineered Foams business line to leverage numerous synergies (resources and talents). At Rochester, FoamPartner (P0583)was previously known as Otto Bock (U-63-12-0026).

FoamPartner: FoamPartner, founded in 1937 and headquartered in Wolfhausen, Switzerland, with 12 locations across Europe, America and Asia-Pacific, is a key player in foam technology. The company offers its customers a broad portfolio of best-in-class foam and other material solutions engineered to the highest standards of form, function and quality. More than 1,100 employees worldwide, the company develops, manufactures, processes and distributes custom-tailored polyurethane foam products which are focused on three market segments: mobility, specialties and living and care.

Recitel: Recticel is a Belgian-listed group with a strong European dimension, also operating in the rest of the world. The company employs approximately 7,000 people in 27 countries. Recticel contributes to daily comfort with foam filling for seats, mattresses and slat bases of top brands, insulation material, interior comfort for cars and an extensive range of other industrial and domestic applications. In 2019, Recticel achieved combined sales of Euro 1.2 billion.

VNs: AQD issued Violation Notices (VNs) dated **June 17, 2015** (for exceeding VOC limits of PTI No. 207-14), to Otto Bock Polyurethane Technologies, Inc. of Rochester Hills, Michigan, and **September 28, 2022** (for failing install exhaust filters and spray coating in EUPOLY10 in violation of PTI No. 207-14A) to FoamPartner Americas, Inc. AQD received VN response letter dated October 18, 2022. The October letter states that a filter inspection program is in place and solvent-based paints have been eliminated. The letter also states that VOC content of the water-based paints is 0.08 pounds of VOC per gallon of coating on water-free basis and VOC content of mold release agent is 5.5 pounds of VOC per gallon of coating on water-free basis.

Fee: Cat **E $250** (**6** ≤ Actual emissions < **60** tons per year and PTE VOC < 90.0, tons per year) with ROP and MACT Synthetic Minor permit.

NAICS Code: **326150** Urethane and Other Foam Product (except Polystyrene) Manufacturing.

Contacts:

1. **Michael Kurkowski**, Regional HSE Manager (Phone: 248-243-3134; Fax: 248-243-3101; Cell: 248-568-3966; E-mail: Kurkowski.Michael@recticel.com)

2. **Steve Foote**, Plant Manager (Phone: 248-243-3112; Fax: 248-243-3101; Cell: 248-839-1224; E-mail: Foote.Steve@recticel.com)

Active PTI: AQD issued, to Otto Block Polyurethane Technologies, Inc., PTI No. **207-14A** dated August 12, 2015, for modification of an existing (PTI No. **207-14**) polyurethane foam molding process. As a manufacturer of FoamPartner's Reaction Injection Molding (RIM) polyurethane in the processes (8 process units) for mats and exercise equipment) were previously exempt from Permit-to-Install (Rule 336.1201) pursuant to Mich. Admin. Code R336.1286(2)(e) (plastic processing equipment -Reaction injection molding (open or closed mold) and slabstock/casting equipment). However, when FoamPartner installed two additional most recent emission units (2: EUPOLY9 & EUPOLY10; both are low volume prototype; non-production equipment) to add to eight least recent existing emission units (8), VOC emissions from the RIM processes increased by > 40 TPY, a Rule 336.1278 significant level. Hence, FoamPartner obtained PTI No. 207-14. FoamPartner modified the permit (PTI No. 207-14 ➔ PTI No. 207-14A) to increase the emissions limit from 77.0 to 89.7 tons of VOC per year. No NSPS is identified for this type of process. PTI No. 207-14A issued to Otto Bock Polyurethane Technologies, Inc. (P0583) has Major MACT and ROP opt out limits (PTI No. 207-14A, FG-FACILITY, I.1-3: Single HAP < 9.0, Aggregate HAPs < 22.5 & VOC < 90.0, tons per year). No more HAPs in the coatings since February 2021. I asked FoamPartner to revise the current active permit to simplify both record-keeping and required calculations and, above all, increase operational flexibility. The current permit (PTI No. 207-14A) is unduly complex.

NESHAP / MACT 6O:

Not subject to NESHAP/ MACT III: NESHAP/ MACT major source opt-out via PTI No. 207-14A, FGFACILITY, I.1&2 (Single HAP: < 9.0 tpy and Aggregate HAPs: ＜ 22.5 tpy) NESHAP / MACT standards for flexible foam production facilities (40 CFR, Part 63, Subpart III—National Emission Standards for Hazardous Air Pollutants for Flexible Polyurethane Foam Production, Page 53996, Federal Register / Vol. 63, No. 194 / Wednesday, October 7, 1998 / Rules and Regulations / Final Rule).

Subject to Area Source NESHAP/ MACT OOOOOO (6O): 40 CFR Part 63, National Emission Standards for Hazardous Air Pollutants for Area Sources: Acrylic and Modacrylic Fibers Production, Carbon Black Production, Chemical Manufacturing: Chromium Compounds, Flexible Polyurethane Foam Production and Fabrication, Lead Acid Battery Manufacturing, and Wood Preserving; Final Rule. Page 38864, Federal Register / Vol. 72, No. 135 / Monday, July 16, 2007 / Rules and Regulations.

AQD does not have delegation for the Area NESHAP / MACT sources. However, FoamPartner does not use **Methylene Chloride**.

On **October 25, 2022**, I conducted a level-2 **FY 2023 scheduled inspection** of FoamPartner Americas, Inc. (“FoamPartner”), fka Otto Block Polyurethane Technologies, Inc. (“Otto Block”), located at 2923 Technology Drive, Rochester Hills, MI 48309-3589. The inspection was conducted to determine compliance with the Federal Clean Air Act; Article II, Part 55, Air Pollution Control, of the Natural Resources and Environmental Protection Act, 1994, PA 451; and Michigan Department of Great Lakes, Environment and Energy, Air Quality Division (EGLE-AQD) administrative rules.

During the inspection, **Steve Foote**, Plant Manager, assisted me.

Michael Kurkowski Regional HSE Manager, who keeps records and MS Excel spreadsheet calculations, was not present. Kurkowski provided the required records and MS Excel Spreadsheets via e-mail.

FoamPartners manufacturers foam products using Reaction Injection Molding (RIM) technology. The facility began operating at this location in April 2011 as Otto Block. There are around 50 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. Most of the products are made for the automotive or fitness industry.

FoamPartners manufactures sound & energy absorbing foams and foaming mats used in the automotive industry and sold in retail markets. The mats are made of polyurethane utilizing a process called Reaction Injection Molding (RIM). The process involves:

1. Mold release agent sprayed on mold
2. Foam reactants are injected into the mold
3. Apply paint to the foam or mat if necessary

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. Hence, RIM waste cannot be recycled unlike plastic injection molding.

Coatings are water-based. Release agents are still solvent based (50% of them solvent based and 30% water based).

PTI No. 207-14A dated August 12, 2015

PTI No. 207-14A, Emissions Units (EUs)

Emission Unit ID	Emission Unit Description (Process Equipment & Control Devices)	Flexible Group ID
EUPOLY1	Stationary 1: A reaction injection mold processing cell with manual spray application of mold release agents and paint coatings. Overspray is controlled by dry fabric filters.	FGPOLYFOAM
Four (4) stations. Each station has its own dedicated filter system.		
EUPOLY2	Turntable #1: A reaction injection mold processing cell with manual spray application of mold release agents. Overspray is controlled by dry fabric filters.	FGPOLYFOAM
TurnTable1: Table turns with 14 stations. One common / communal filter system for all 14 stations because table turns such that the same filter can be used.		
EUPOLY3	Turntable #2: A reaction injection mold processing cell with manual spray application of mold release agents. Overspray is controlled by dry fabric filters.	FGPOLYFOAM
TurnTable2: Table turns with 14 stations. One common / communal filter system for all 14 stations because table turns such that the same filter can be used.		
EUPOLY4	Turntable #3: A reaction injection mold processing cell with manual spray application of mold release agents and paint coatings. Overspray is controlled by dry fabric filters.	FGPOLYFOAM
TurnTable3 Table turns with 8 stations. One common / communal filter system for all 8 stations because table turns such that the same filter can be used.		
EUPOLY5	Turntable #4: A reaction injection mold processing cell with manual spray application of mold release agents and paint coatings. Overspray is controlled by dry fabric filters.	FGPOLYFOAM
TurnTable4: Table turns with 10 stations. One common / communal filter system for all 10 stations because table turns such that the same filter can be used.		
EUPOLY6	Turntable #5: A reaction injection mold processing cell with manual spray application of mold release agents. Overspray is controlled by dry fabric filters.	FGPOLYFOAM
Turntable #5: Table turns with 12 stations. One common / communal filter system for all 12 stations because table turns such that the same filter can be used.		
EUPOLY7	Turntable #6: A reaction injection mold processing cell with manual spray application of mold release agents and paint coatings. Overspray is controlled by dry fabric filters.	FGPOLYFOAM
Turntable #6: Manual unlike others. 8 stations in all. One common / communal filter system for all 8 stations because table turns such that the same filter can be used. Turntable is turned manually		
EUPOLY8	Stationary 2: A reaction injection mold processing cell with manual spray application of mold release agents and paint coatings. Overspray is controlled by dry fabric filters.	FGPOLYFOAM
Stationary 2: Backdraft filters. On big booth. No turning.		

Emission Unit ID	Emission Unit Description (Process Equipment & Control Devices)	Flexible Group ID
EUPOLY9	Stationary 3: A reaction injection mold processing cell with manual spray application of mold release agents. Overspray is controlled by dry fabric filters.	FGPOLYFOAM
EUPOLY10	Stationary Prototype: A reaction injection mold processing cell with manual spray application of mold release agents. Overspray is controlled by dry fabric filters.	FGPOLYFOAM
EUPOLY9 & EUPOLY10: Protypes with backdraft filters. Each TurnTable is equipped with updraft filter system. EUPOLY9 & EUPOLY10: both are low volume prototype; non-production equipment. All EUs use mold-release agents which are now < 50% water-based. Currently, EU4,5,7&8 use water -based coatings. No HAPs and no VOC in coatings.		
No more HAPs in the coatings since February 2021. Mold-release agent has maximum 6.2 pounds of VOC per gallon of coatings on water-free basis. No heat provided for drying as plastics are warm.		

PTI No. 207-14A, FLEXIBLE GROUPS (FGs)

Flexible Group ID	Flexible Group Description	Associated Emission Unit IDs
FGPOLYFOAM	A polyurethane foam molding process consisting of ten (10) reaction injection mold lines.	EUPOLY1, EUPOLY2, EUPOLY3, EUPOLY4, EUPOLY5, EUPOLY6, EUPOLY7, EUPOLY8, EUPOLY9, EUPOLY10
FGFACILITY	All process equipment source-wide including equipment covered by other permits, grandfathered equipment and exempt equipment.	NA

PTI No. 207-14A, FGPOLYFOAM

FG-POLYFOAM (EUPOLY1, EUPOLY2, EUPOLY3, EUPOLY4, EUPOLY5, EUPOLY6, EUPOLY7, EUPOLY8, EUPOLY9, EUPOLY10): A polyurethane foam molding process consisting of ten (10) reaction injection mold lines.

PM control: Dry fabric filters for overspray particulate matter

PTI No. 207-14A, FGPOLYFOAM, I.1-7

Pollutant	Limit	Time Period / Operating Scenario	Equipment	April 2022	Underlying Applicable Requirements
1. VOC, acetone, and methyl acetate combined	89.7 tpy	12-month rolling time period as determined at the end of each calendar month	FGPOLYFOAM	32.2	
2. VOC	50.0 tpy	12-month rolling time period as determined at the end of each calendar month	EUPOLY6 within FGPOLYFOAM	11.9	
3. VOC	47.0 tpy	12-month rolling time period as determined at the	EUPOLY2, EUPOLY3, EUPOLY5 each	19.0	

Pollutant	Limit	Time Period / Operating Scenario	Equipment	April 2022	Underlying Applicable Requirements
		end of each calendar month	within FGPOLYFOAM		
4. VOC	43.0 tpy	12-month rolling time period as determined at the end of each calendar month	EUPOLY7, EUPOLY9, EUPOLY10 each within FGPOLYFOAM	0.3	
5. VOC	36.0 tpy	12-month rolling time period as determined at the end of each calendar month	EUPOLY1, EUPOLY8 each within FGPOLYFOAM	0.1	
6. Dimethylformamide (CAS No. 68-12-2)	58.5 lb/day	Calendar day	EUPOLY4 and EUPOLY8 combined within FGPOLYFOAM	Not used any more	
7. Dimethylformamide (CAS No. 68-12-2)	20.9 lb/day	Calendar day	EUPOLY1 and EUPOLY8 combined within FGPOLYFOAM	Not used any more	

PTI No. 207-14A, FGPOLYFOAM, II.1-2

Material	Limit	Time Period / Operating Scenario	Equipment	Pounds of VOC per gallon of coating on water-free basis	
1. Non-automotive paint coating	6.5 lb VOC/gal (minus water)[a] as applied	Instantaneous	FGPOLYFOAM	4.8 Further reduced to 0.08 as FoamPartner shifted to water-based paint	
2. Mold release	6.4 lb VOC/gal (minus water)[a] as applied	Instantaneous	FGPOLYFOAM	6.2	
[a] The phrase “minus water” shall also include compounds which are used as organic solvents and which are excluded from the definition of volatile organic compound. **(R 336.1602(4))**					

PTI No. 207-14A, FGPOLYFOAM, III.1-5

All waste materials & spent filters are handled properly. VOC and / or HAP containing materials are kept in closed containers.

Dimethylformamide (CAS No. 68-12-2): : not used anymore

PTI No. 207-14A, FGPOLYFOAM, IV.1-5

HVLP applicators are used. The filters are installed for overspray particulate matter. Unlike the previous inspection when a Violation Notice (VN) was issued for improper installation, the filters were installed properly during the FY 2023 inspection. Daily checklist for dry filter system is logged.

PTI No. 207-14A, FGPOLYFOAM, VI.1-4

The required calculations are performed via MS Excel Spreadsheet. The chemical composition and usage records are kept facilitating emissions calculations.

PTI No. 207-14A, FGFACILITY

PTI No. 207-14A, FGFACILITY, I.1-3

Pollutant	Limit	Time Period / Operating Scenario	Equipment	Oct 2021	
1. Each Individual HAP	Less than 9.0 tpy	12-month rolling time period as determined at the end of each calendar month	FGFACILITY	0	
2. Aggregate HAPs	Less than 22.5 tpy	12-month rolling time period as determined at the end of each calendar month	FGFACILITY	0	
3. VOC	Less than 90.0 tpy	12-month rolling time period as determined at the end of each calendar month	FGFACILITY	33	
No HAPs in coatings as well release agents.					

PTI No. 207-14A, FGFACILITY, II.1

Material	Limit	Time Period / Operating Scenario	Equipment	Oct 2021	
1. VOC containing materials	258,500 lb/yr	12-month rolling time period as determined at the end of each calendar month	FGFACILITY	118,539	

PTI No. 207-14A, FGFACILITY, VI.3

VOC and HAP composition information is kept and the usage records are kept. Using MS Excel Spreadsheet, the information is tabulated, and VOC calculations are performed.

Conclusion:

FoamPartner in compliance and September 28, 2022, Violation Notice (VN) may be resolved.

NAME J Kenneth Marshall DATE February 22, 2023 SUPERVISOR Joyce