

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

N244070973

FACILITY: ND Industries, Inc.		SRN / ID: N2440
LOCATION: 1893 Barrett Rd, TROY		DISTRICT: Warren
CITY: TROY		COUNTY: OAKLAND
CONTACT: Ajay Jain , EHS Manager		ACTIVITY DATE: 02/29/2024
STAFF: Owen Pierce	COMPLIANCE STATUS: Compliance	SOURCE CLASS: MINOR
SUBJECT: FY 24 Compliance Inspection		
RESOLVED COMPLAINTS:		

On February 29, 2024, I (Owen Pierce EGLE - Air Quality Division) performed a scheduled targeted inspection of ND Industries located at 1893 Barrett Road, Troy, Michigan. The purpose of the inspection was to determine the facility's compliance with the Federal Clean Air Act; and Article II, Part 55, Air Pollution Control of Natural Resources and Environmental Protection Act, 1994 Public Act 451 and the conditions of Permit to Install (PTI) No. 601-95C. Upon arrival, I met with Ajay Jain, EHS Manager, Stephanie Jarrett, Senior Environmental Engineer at Fishbeck, and Desiree Snyder, Technical Director of Research & Development (R&D), and conducted a pre-inspection meeting where I introduced myself, presented my credentials, and stated the purpose of the inspection.

During the pre-inspection meeting, Desiree explained the facility's processes and equipment. ND Industries makes chemical adhesives for locking and sealing applications for automobile nuts, bolts, and fasteners to improve strength and adhesion. ND manufactures microencapsulated, epoxy-based resin materials. A batch process is used to create microspheres: epoxy resin, encapsulated inside rigid, microscopic, urea-formaldehyde-melamine polymeric spheres. Prepolymer is processed in a reaction vessel, then transferred to a kettle where it is mixed with epoxy resin and other additives and allowed to rest. Waste liquid is decanted from the kettle before the microspheres are transferred to a fluidized bed dryer, consisting of a fluid separator, which shakes to remove additional water, followed by a dryer, to evaporate the remaining fluid. The dried microspheres are sent to a separator via a vacuum, which discharges into a 55-gallon product drum. A baghouse controls fine powder from the separator.

The facility has approximately 10 on-site employees and operates one shift from 7:00am to 3:30pm, Monday through Friday with an occasional day of work on Saturday depending on their workload. According to Ajay, there have been no recent process or equipment changes, and there are no cold cleaners, boilers, or emergency generators at the facility. Following the pre-inspection meeting, Ajay, Stephanie, and Desiree lead me on a tour of the facility.

Facility Walk-through Observations

The facility is permitted for one Microcap production line, which includes, and was observed as having, four heated process kettles with mixers, one heated prepolymer reaction vessel, one large closed heated reaction vessel, and one continuous fluidized bed dryer with corresponding fabric filter.

During the facility walk-through, waste materials were observed as being stored in closed 55-gallon drums, and properly disposed of as required by Special Condition (SC) III.1. Desiree indicated that spent filters are disposed of with the solid waste materials in a manner which minimizes the introduction of air contaminants to the outer air as required in SC III.2. The exhaust fabric filter on the continuous fluidized bed dryer and a media-based air filter on the process kettle system were observed as being installed and appeared to be operating in a satisfactory manner as required in SC IV.1.

I observed the pressure drop gauge on the exhaust fabric filter collector, and Desiree confirmed the presence of an alarm that will sound if the pressure drop exceeds 1.0 inches of water as required by SC IV.2. In SC VI.5 of the permit, it is required that the facility keep records of the date, time, and duration of any alarms sounded by the fabric filter collector pressure monitor and any corrective action performed, however, I was informed by Desiree and one of the technicians on site that no alarms have gone off since the last inspection, which was completed in 2019.

PTI No. 601-95C Compliance Evaluation

In February 2023, the facility was issued PTI No. 601-95C for one Microcap production line where the VOC and acetone emissions limits for EU-MICROCAP were increased from the previous permit limits. In addition, a formalin material usage limit of 150,000 lbs per 12-month rolling time period was added to the permit and replaces the previous microcap batch limit. The facility now uses a material balance to calculate VOC and formaldehyde emissions from formalin usage. VOC emissions from formalin usage are comprised of formaldehyde and methanol where it is assumed that 2% of the formaldehyde used is emitted and 66% of the methanol used is emitted. Recordkeeping requirements were provided via email following the inspection.

ND Industries is required to maintain records of gallons of material used monthly, VOC and acetone content used monthly, pounds of formalin used per month and per 12-month rolling, monthly and 12-month rolling VOC and acetone mass emissions of materials used as required in SC VI.3, as well as gallons or pounds of each formaldehyde-containing material used per month, formaldehyde content in pounds per gallon or pounds per pound of each material used per month, and monthly and 12-month rolling formaldehyde mass emission calculations as required in SC VI.4. Records from January 2021 - December 2023 were provided, however records from January 2023 - December 2023 were examined to determine compliance with the new emissions limits set forth in PTI No.601-95C.

EU-MICROCAP

SC I.1 sets the VOC emission limit at 6.0 tons per year (tpy) based on a 12-month rolling time period as determined at the end of each calendar month. SC I.2 sets the acetone emission limit at 12.5 tpy based on a 12-month rolling time period. SC I.3 sets the formaldehyde emission limit at 1,203 lb/yr based on a 12-month rolling time period.

After a review of the provided records, the highest 12-month rolling VOC emissions calculated from January 2023 - December 2023 was 4.2 tpy as recorded at the end of January 2023. The highest 12-month rolling acetone emissions calculated from January 2023 - December 2023 was 7.2 tpy as recorded at the end of January and February 2023. The highest 12-month rolling formaldehyde emissions from EU-MICROCAP, calculated from January 2023 - December 2023, was 1,040.6 lb/yr as recorded at the end of January 2023. Based on a review of the emissions records, the facility is in compliance with the VOC, acetone, and formaldehyde emissions limits.

SC II.1 requires that the permittee shall not use more than 150,000 pounds of formalin in EU-MICROCAP per 12-month rolling time period as determined at the end of each calendar month. The highest 12 month rolling pounds of formalin used from January 2023 - December 2023 was 86,785.6 pounds as recorded at the end of January of 2023. Based on a review of the formalin usage records, the facility is in compliance with the formalin usage limit.

SC VI.2 states that the permittee shall maintain a current listing from the manufacturer of the chemical composition of each material, including the weight percent of each component. The facility maintains Safety Data Sheets (SDS) for each material used in the Microcap production process and SDS sheets were reviewed on site during the inspection.

FGFACILITY

SC I.3 sets a facility-wide formaldehyde emission limit of 1,206.7 lb/yr based a 12-month rolling time period as determined at the end of each calendar month. This facility-wide condition is a requirement that was added to the newest permit which was issued in February 2023. Monthly records for formaldehyde emissions were being kept prior to the new permit being issued, however, facility-wide emissions for formaldehyde did not begin to be recorded until after the permit was issued. As a result, the first 12-month rolling records for facility-wide formaldehyde emissions were recorded in December 2023 as 512.3 lb/yr. Based on a review of the emissions records, the facility is in compliance with the facility-wide formaldehyde emissions.

Conclusion

Based on the observations made during the inspection, and an analysis of the requested records, ND Industries is in compliance with the conditions and requirements of PTI No. 601-95C.

NAME Owen Pierce

DATE 4/9/2024

SUPERVISOR K Kelly