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

B414560097

FACILITY: AkzoNobel Coatings Inc		**SRN / ID:** B4145
LOCATION: 120 Franklin, PONTIAC		**DISTRICT:** Warren
CITY: PONTIAC		**COUNTY:** OAKLAND
CONTACT: Jeffrey Poniewierski , Process Improvement Supervisor		**ACTIVITY DATE:** 08/24/2021
STAFF: Joe Forth	**COMPLIANCE STATUS:** Non Compliance	**SOURCE CLASS:** SM OPT OUT
SUBJECT: On-site Inspection		
RESOLVED COMPLAINTS:		

On August 24, 2021, Michigan Department of Environment, Great Lakes, and Energy-Air Quality Division (EGLE-AQD) staff, I, Joseph Forth, conducted a scheduled inspection of AkzoNobel Coatings Inc. located at 120 Franklin, Pontiac, MI 48341. 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 Environmental Quality, Air Quality Division (MDEQ-AQD) rules; Opt-Out Permit to Install No. 184-06; and Permit to Install No. 165-19.

I arrived at the facility and was met by Mr. Jeff Poniewierski, HSE Business Partner. I introduced myself, provided my credentials and stated the purpose for inspection.

AkzoNobel manufactures paint and coatings for a broad range of applications. Most manufactured products end up at automotive body shops for collision repair. There are approximately 155 employees that operate this plant 5 to 7 days a week during three shifts.

Paint manufacturing at AkzoNobel is a batch process. Constituents of a paint/coating mixture are blended in a mixing tank to create the desired product. A variety of solvents and organic dyes are used in this process. Finished products and raw materials are stored on-site in a separate warehouse from the manufacturing floor.

Paint/coating manufacturing at AkzoNobel can be categorized in one of three batch types: Large batch (LB), small batch (SB), and color blending unit (CBU). The large batch tanks are stationary units larger than 550 gallons that are bolted in place and have permanent dedicated plumbing on each tank. The small batch tanks are portable units smaller than 550 gallons that can be wheeled around. The color blending unit (CBU) manufacturers small batches (less than 250 gallons) with a relatively short lead time (1-2 days). This is possible because the formulation usually includes premixed raw materials that are manufactured in the main manufacturing area. There are several premixed raw materials that are all attached to a common unit (CBU) that pumps the desired quantities into the batch manufacturing mix tank.

Emissions from this facility are estimated using a commercially available software called PirnieAIR. PirnieAIR is a Microsoft Access database that takes in process specific data and EPA-published equations or AP-42 emission factors to calculate emissions from a batch. The larger paint manufacturing processes utilize around 90 manufacturing steps to calculate emission factors. These steps include adding each solvent, mixing, heating, and gas sweeps.

During a gas sweep, solvent vapors are evacuated during product mixing to prevent an explosive mixture of vapors inside a vessel. Nitrogen gas is used to evacuate vapors. Emissions from the

gas sweeps account for almost half the emissions for large batches. In general, emissions from large batch manufacturing are around 8 times more than in a small batch.

PirnieAIR emission factors were determined using the weighted average of VOC and HAP content for each batch formulation. The formulation with the highest weighted VOC and HAP content (worst-case scenario) is used as the basis for calculating VOC and HAP emission factors. A worst-case scenario formulation was assigned to each of the following batch types: small batch solvent pigmented coatings, small batch solvent non-pigmented coatings, small batch waterborne coatings, large batch solvent pigmented coatings, large batch solvent non-pigmented coatings, large batch waterborne coatings, and color blending unit operations. The emission factor generated is multiplied by the total gallons produced in each type of batch.

PirnieAIR also estimates emissions for portable tank cleaning. Portable tanks are cleaned using a churn washer. Clean recycled solvent is sprayed into the portable tank. A rotating brush is lowered into the tank, sealing the opening and cleaning the inside of the tank. Spent solvent is collected in a waste solvent drum. Each cleanup uses approximately 5 gallons of clean solvent.

Waste solvent from manufacturing and tank cleaning is processed by Chemical Solvents, Inc. and sent back to AkzoNobel as recycled solvent to be reused for tank cleaning and other miscellaneous cleaning. Around 4,000 gallons of waste solvent per week is sent to Chemical Solvents, Inc. with a recovery rate of around 65%. Recycled solvent is stored in a 12,000-gallon tank at the tank farm.

Compliance

All records unless stated otherwise were collected digitally and can be located in: S:\Air Quality Division\STAFF\Joe Forth\B4145 AkzoNobel FY21 Inspection

PTI No. 184-06

EUPARTSWASHER

The special conditions of this section apply to a specialized solvent-based parts washer that AkzoNobel has not installed. Mr. Poniewierski stated that there are currently no plans to install a specialized parts washer at the facility. Because this washer is not currently installed, these special conditions do not currently apply.

FGCLEANING

2.1 The permittee shall conduct cleaning of paint manufacturing and paint shipping containers using methods that minimize VOC emissions. Organic solvent is used for tank/equipment cleaning. Tanks are completely closed during cleaning cycles.

2.2 The permittee shall store wash solvent in closed containers. All solvents at the facility appeared to be stored in closed containers.

2.3 The permittee submitted to the AQD district supervisor, within 60 days of permit issuance, approvable work practice standards for portable tank cleaning. On October 23, 2006, AkzoNobel submitted the work practice standards for both the Hockenmeyer tank cleaner and the color

blending unit tank cleaner. These cleaning procedures are still used today and can be found in the AkzoNobel AQD file.

2.4 The permittee shall equip all stationary and portable mixing tanks, and high-speed dispersion mills with covers that cover all openings except for what is needed to allow safe clearance for the mixing shaft. All of these tank types were covered during my inspection. Stainless steel covers are used in cases where the tank contains solvents. On clean tanks, sometimes a flexible plastic cover is used to prevent the introduction of dust.

2.5 The permittee shall keep monthly records of the number of portable tanks cleaned. These records are maintained in the Pirnie Air database. The highest reported monthly number of tanks cleaned was 306 tanks in March 2021. The most recently reported monthly total was 239 tanks in July 2021.

2.6 The permittee shall keep a record of the number of parts cleaners used at the facility. Mr. Poniewierski provided me with these records. There are 9 parts washers throughout the facility, 8 of which are in service. All parts washers utilize reclaimed solvent from the tote cleaning process. Parts washers had operating procedures posted and the lids were closed.

2.7 The permittee shall keep a written record of current emission factors used to calculate VOC and HAP emission rates in FGCLEANING. These records were made available to me during my inspection. The current emission factor is 1.5 lb VOC and 0.48 lb HAP per portable tank cleaned.

2.8 The permittee shall keep monthly and 12-month rolling time period calculations of VOC and HAP emission rates from FGCLEANING. These records are maintained. Mr. Poniewierski provided me with the most recently calculated 12-month rolling period beginning in August 2020 and ending in July 2021. 3,179 portable tanks were cleaned during this period resulting in calculated VOC emissions of 2.4 tons and HAP emissions of 0.8 tons.

FGPAINT

This flexible group includes all paint manufacturing operations including EULARGEBATCH, EUSMALLBATCH, and EUCBU (Color Blending Unit). Batches larger than 550 gallons are considered large batches. Batches less than or equal to 550 gallons are considered small batches. The color blending unit is used for batches less than or equal to 250 gallons.

In all three emission units, VOC emissions are vented directly to the atmosphere through conservation vents, exhaust systems, or dust collection systems. Particulate emissions from the addition of paint solids are controlled by dust collectors.

3.1 PM emission limit from FGPAINT of 0.1 lbs/1,000 lbs exhaust gas. Compliance with this condition is verified through proper operation of the baghouses. The dust collectors in the main plant were not operating during this inspection because no material was being charged. The dust collectors appeared to be in good working order and I did not observe any particulate scattered near any of them.

3.2 (a-d) 12-month rolling production material limits for the small batch, large batch, color blending unit, and waterborne paint manufacturing. Compliance with this condition is demonstrated through recordkeeping. Each time a batch is produced, the volume is entered into

a database that tracks the total production volume. 12-month rolling records of production volumes from August 2020 to July 2021 were provided to me during my inspection. Based on the records I reviewed the production volume limits have not been exceeded (see table below for 12-month period ending in July 2021).

Batch Type	12-month Rolling Production Volume (gallons)	Limit (gallons)
Small Batch	723,961	2,200,000
Large Batch	3,067,635	5,086,764
Waterborne	106,235	1,256,000
CBU	86,142	300,000

3.3 The permittee shall clean paint manufacturing and paint shipping containers using methods that minimize the emission of VOCs. Organic solvent is used for tank/equipment cleaning. Tanks are completely closed during cleaning cycles according to Mr. Poniewierski.

3.4 The permittee shall store wash solvent in closed containers. During my inspection, wash solvent appeared to be stored in closed drums.

3.5 All stationary mixing tanks, portable mixing tanks, and high-speed dispersion mills to be equipped with covers that cover all openings except openings that are no larger than necessary to allow safe clearance for the mixer shaft. All tanks were equipped with covers. There is a circular cutout in the middle of the metal covers that is just large enough for the mixer shaft.

3.6 The permittee shall not load solids into any equipment unless the associated dust collectors are installed, maintained, and operated in a satisfactory manner. Based on my inspection and record review the dust collectors are operated and maintained correctly. Dust collectors are only operated when charging (loading) tanks with solids. I did not notice any fugitive paint solids outside or in the plant.

3.7 The permittee shall replace all flexible plastic covers with tight fitting covers. Flexible plastic covers are still allowed on empty tanks. All tanks that contain materials are equipped with stainless steel, tight fitting, covers. Flexible covering is still used on empty tanks.

3.8 The permittee shall ensure that dust collectors DC-1, DC-2, WB, and prestage be equipped with a device to measure pressure drop on a continuous basis. All dust collectors appeared to be equipped with a device to measure the pressure drop during my inspection.

3.9 The permittee shall keep monthly and 12-month rolling time period records of the gallons of each paint type produced. These records are maintained. Based on the records provided, there are no reported exceedances of production volumes.

3.10 The permittee shall keep weekly records of the pressure drop for the DC-1, DC-2, WB, and prestage dust collectors. These weekly records were provided.

3.11 The permittee shall keep a written record of emission factors used to calculate VOC and HAP emission rates from FGPAINT. These records are maintained in the Pirnie Air database and were made available to me during my previous inspection. These factors are also maintained in the EGLE-AQD AkzoNobel facility file.

3.12 The permittee shall keep monthly and 12-month rolling time period calculations of VOC and HAP emission rates for FGPAINT. These records are maintained as part of the Pirnie Air database. Based on the records provided, AkzoNobel has not exceeded permit or major source thresholds.

3. All stacks required to discharge unobstructed appeared to be unobstructed during the inspection.

FGFACILITY

4.1 (a- c) Establishes facility-wide emission limits for VOC, individual HAP, and total HAP emissions of 60 tons/year, 9 tons/year, and 22.5 tons/year, respectively. AkzoNobel appears to be under these emission limits. Facility-wide emissions for the 12-month rolling period ending in August 2021 are reported at 9.45 tons of VOCs and 3.74 tons of total HAPs for PTI No. 186-06. For PTI No. 165-19 FG-Marine, the VOC calculations were incorrect and appear to be approximately 90 tons. This would mean the facility is in exceedance of their facility limit on VOCs. The HAPs for FG-Marine were not calculated, so compliance with the facility wide individual and aggregate HAP limits could not be verified. The facility appears to be in exceedance of their facility wide VOC emission limit of 60 tons/year and will be issued a violation for this matter.

I will request the facility add a field to their FG-Marine spreadsheet to keep track of HAP emissions from the flexible group.

Emergency Generator

AkzoNobel operates one Kohler 100RZG natural gas fired emergency generator with a maximum power rating of 121 kW (162 hp). The unit was installed on-site in December 2006. The purchase order for this unit was also made in December 2006. AQD considers the date the purchase order was made to be the date that AkzoNobel "commenced construction" of the emergency generator. This generator is run for 30 minutes weekly for preventative maintenance purposes. Because the engine is less than 500 HP and manufactured before July 2008, it not subject to the Standards of Performance for Stationary Spark Ignition Internal Combustion Engines NSPS Subpart JJJJ as long as it has not been modified or reconstructed since June 12, 2006. I am awaiting contact from AkzoNobel to confirm the engine has not been modified or reconstructed since said date.

Laboratory Operations

Akzonobel operates a pilot laboratory where small batches of new formulations are tested before going into full-scale production. Emissions from the pilot lab are estimated using the PirnieAir small batch emission factor.

In addition to the pilot laboratory, there is a research and development laboratory where paint/coatings are tested for various parameters. There are three spray booths in this lab that are used to spray small rectangular panels for testing purposes. All three booths are exhausted outdoors and are equipped with dry filters. I did not observe any gaps in the dry filters. These booths are not used for production. Only a small amount of paint is used. The laboratory sprays approximately 900 small sample panels per month. Mr. Poniewierski stated in an email that most applications take the full amount of material mixed for sprayout which is 180 grams of paint. This equates to 2.5 sprayouts per pound of material. 900 / 2.5 = 36 pounds of material sprayed per month. These paint booths appear to be exempt from Rule 201 requirements pursuant to Rule 287 (2)(c).

Acetone is used for paint gun cleaning and washing solvent cans. About 50 gallons of acetone is ordered for laboratory operations each month. Of these 50 gallons, around 90% is used to wash solvent cans. The other 10% is used to wash paint guns.

There are 8 storage tanks at the tank farm used to store raw batch materials. A vapor balance system is installed to capture emissions during filling. These tanks appear to be exempt from Rule 201 requirements pursuant to Rule 284 (2)(i).

Permit to Install No. 165-19

Permit to install No. 165-19 was issued on March 13, 2020 for equipment to prepare specialty marine and protective coatings, consisting of ten mixing stations and related equipment, a container filling area, and a shared baghouse dust collector.

FG-Marine

I.1 Limits particulate matter (PM) emissions to 0.20 lb per ton of solids charged. Compliance with this emission limit is demonstrated by monitoring and recording the pressure drop across the dust collector, DC-Marine, once each week. Based on the records provided, pressure drop is monitored on DC-Marine.

1.2 Limits VOC emissions to 5.9 tons per year based on a 12-month rolling time period. AkzoNobel maintains a spreadsheet that shows each batch processed, the amount of VOC in that batch, and the resulting VOC emissions based on the emission factors established in this permit to install. The VOC calculations for FG-Marine were not correct, based on my calculations the actual emissions appear to be 89.22 tons. This is an exceedance of this condition and will be included in the violation notice. The facility had all the necessary data but was not aware they had to compile it into a rolling 12-month total. I instructed Mr. Poniewierski to do so moving forward.

II.1 Limits the amount of coatings produced to 3,000,000 gallons per year. Records from September 2020 through August 2021 show a total of 171,036 gallons produced.

II.2 Limits the VOC content of batches to 3,600 lbs per batch. AkzoNobel calculates and records the VOC content of each batch. The highest reported single batch VOC content was 2812.5 lbs for the "ENVIROLINE 375 GREEN PART A NVA344".

II.3 Limits the VOC content of every 10 batches processed concurrently to 17,938 per production cycle. The facility has not ever produced 10 batches concurrently, nor do they anticipate the need for that high of production. Based on the records, it does not appear more than 10 batches have been made on any day. This was added as a permit condition because AkzoNobel was unsure of the capacity they would need and they wanted their permit issued quickly.

II.4-38 Material usage limits for 35 different air toxics. Not all 35 toxics have been used since operations began. Mr. Poniewierski believes that some of these compounds may never be used at this location. Each air toxic has a compound specific material use limit and a specific averaging time.

Since operations began in April 2020, the following air toxics have been used: Styrene (100-42-5), Benzene (71-43-2), Cumene (98-82-8), Chlorinated paraffins (63449-39-8), Siloxanes and silicones (67762-90-7), Chromium (7440-47-3), Nickel (7440-02-0), Arsenic (7440-38-2), and Cadmium (7440 -43-9). Mr. Poniewierski describe in an email how the facility meets compliance with the material limits:

"We do not track each individual batch and quantity. Instead, we set up batch size limits in our production system to ensure we do not go above the material limits for an 8 hour run. We do not schedule multiple batches of one product as our equipment will not allow it. So, the critical part is ensuring we do not go above the 8 hour limit.

Example for reviewing styrene from production of one formula

Tab 100-42-5 in the "Evaluation of Potential CAS Restrictions" file shows column F is the formulation number we use. Take for example 20046264 (row 16) column I it states what the maximum runs size we have in the system to be made so that we do not go above our 8 hour limit.

You can now sort the "49 Brush Production for Emissions" sheet column H which is formula number. Sort for 20046264. It will show 2 batches made from April 2020 to Aug 2021. The runs sizes of the batches were 35.6gallons and 20.3 gallons. Both well below the max run size of 355.8 gallons in column I of the "Evaluation of Potential CAS Restrictions" file."

I reviewed the various materials used in the way Mr. Poniewierski described and I did not notice any exceedances of the batch volume limits. However, due to this being a long tedious process (cross referencing between two different spreadsheets). I requested Mr. Poniewierski to put the maximum batch volume and whether or not the specific batch exceeded the volume in the same spread sheet as the batch information. The facility is considered in compliance with the material limits.

IV.1 Permittee must equip all stationary and portable mixing tanks, and high-speed dispersion mills with covers that cover all openings except for what is needed to allow safe clearance for the mixing shaft. These tank types were covered during my inspection. Stainless steel covers are used in cases where the tank contains solvents. On clean tanks, sometimes a flexible plastic cover is used to prevent the introduction of dust.

IV.2 The permittee shall not charge solids to any equipment in FG-Marine unless the dust collector is installed, maintained, and operated in a satisfactory manner. There did not appear to be any particulate around the dust collector and the facility provided pressure records. The dust collector was not operating at the time of inspection.

IV.3 The permittee shall equip the dust collector with a device to indicate the pressure drop across the dust collector. I confirmed during the inspection DC-Marine is equipped with a pressure gauge.

VI.1-7 The facility provided the required records.

VI.8 (a-ee) The permittee shall maintain records, in each batch, of the maximum concentration by weight of 31 different air toxics. These records are maintained. AkzoNobel maintains a spreadsheet tab for each air toxic. In these spreadsheets, each air toxic is broken down into every possible formulation that particular air toxic is used in. The maximum concentration of each air toxic is listed next to the corresponding coating formulation.

VI.9 (a-ii) Specifies recordkeeping requirements for 35 different air toxics. Each toxic has its own specific averaging time. Averaging times range from 1 hour, 8 hours, to 12-month rolling limits. AkzoNobel instead elects to impose batch volume limitations that if they maintain they will be within the averaging time limits. Batch volume data was provided.

VIII Specifies required stack dimensions. I did not verify stack dimensions during this inspection. Stacks appeared to be discharged unobstructed vertically upwards to the ambient air.

Conclusion

The permittee was not keeping required 12-month rolling totals for gallons produced and VOC emissions. This is in violation with their permits. The facility was also in violation of the VOC emission limits for PTI No. 184-06 FGPAINT Special Conditions 3.2(a-d), 3.9 and FG-Facility Special Conditions 4.1a, 4.3 and PTI No. 165-19 FG-Marine Special Conditions I.2 and VI.3. I have requested the facility to develop these records and submit them to the AQD for the next 6 months (October 2021 through March 2022) to evaluate ongoing compliance. The facility will be issued a violation notice for the previously stated emissions and recordkeeping discrepancies.

NAME Joseph M Fitt DATE 9/30/21 SUPERVISOR K. Kelly