

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

N742666535

FACILITY: CROWN GROUP SHELBY TWP PLANT		SRN / ID: N7426
LOCATION: 12020 SHELBY TECH DR, SHELBY TWP		DISTRICT: Warren
CITY: SHELBY TWP		COUNTY: MACOMB
CONTACT: Jason Nowak , Regional Environmental Manager		ACTIVITY DATE: 03/02/2023
STAFF: Owen Pierce	COMPLIANCE STATUS: Non Compliance	SOURCE CLASS: MINOR
SUBJECT: FY 2023 Inspection Report		
RESOLVED COMPLAINTS:		

On March 2, 2023, I (Owen Pierce EGLE - Air Quality Division) performed a scheduled targeted inspection of Crown Group Shelby (PPG) located at 12020 Shelby Technical Drive, Shelby Township, Michigan. Mark Diadosz (EGLE-AQD) joined me for the inspection. 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.187-18. Upon arrival Mark and I met with Jason Novak, Regional Environmental Manager - Midwest, Jonathan Rasmussen, Plant Manager, Richard Mroczka, Maintenance, Powder Manager, Christopher Wypych, Process Engineer, and Jeffrey Pajk, Site EHS Manager and conducted a pre-inspection meeting where we introduced ourselves, presented our credentials, and stated the purpose of the inspection.

During the pre-inspection meeting, Mr. Novak explained the facility processes and equipment. The facility coats miscellaneous metal parts using an e-coat system and powder coating process. The powder coating process was exempt under AQD Rule 287(2)(d). Metal parts to be coated go through an 11-stage cleaning process that starts with Stages 1-3 metal parts cleaning using Alkaline cleaner at 125°F. Stages 4 & 5 are city water rinsing processes. Stage 6 is alkaline cleaning/conditioning. Stage 7 is Zinc phosphating process. Stages 8 & 9 are reverse osmosis rinsing processes. Stage 10 is a sealing process. Stage 11 is RO (reverse osmosis) water immersion rinse process. After the 11- stage cleaning process, the parts go through electrodeposition coating (e-coat) process and 3 stages of post rinsing. The e-coat process utilizes a very low (1.6% by weight less water) VOC water-based coating. The coated parts then go through a curing oven. The curing oven operates around 370°F to 385°F. From the curing oven, the parts go through the powder coating booth, where they may or may not be powder coated, depending on customer requirements. The parts then go through the powder cure oven, a cool-down tunnel, then through final inspection and packing for shipment to customers.

An AQD letter dated February 14, 2001 determined that the powder coating process was exempt under AQD Rule 287(d) and the e-coat process was exempt under AQD Rule 290. The e-coating process may potentially remain exempt from permitting per Rule 290, which allows an emission unit to be exempt from permit to install requirements. The Safety Data Sheets (SDS) that I obtained for the e-coat showed no Hazardous Air Pollutant compounds with some Volatile Organic Compounds (VOC), and according to Rule 290(2)(a)(ii), the uncontrolled emissions of the VOC air contaminants in the e-coat used in this process should not be more than 1,000 pounds per month. Crown Group provided emissions records from January 2021 to February 2023 and no monthly emissions exceeded the 1,000 pounds per month VOC limit expressed in Rule 290(2)(a)(ii).

Three of the four listed ingredients of the e-coat liquid (Product Name: POWERCRON BLACK FEED; Product name: CF590-534) are registered in the Michigan Air Toxics System Database (Kaolin, Bis(2-(2-butoxyethoxy)ethoxy)methane, and Carbon Black, respirable powder), and all three have listed initial threshold screening levels (ITSL). The AQD currently does not have a screening level for dibutyltin oxide. Rule 290(2)(a)(ii)(a) states that for toxic air contaminants with an ITSL greater than or equal to 0.04 micrograms per cubic meter and less than 2.0 micrograms per cubic meter, the total uncontrolled emissions shall not exceed 20 pounds per month (lbs/month). Bis(2-(2-butoxyethoxy)ethoxy)methane is the only e-coat ingredient that has an ITSL value between 0.04 and 2.0 micrograms per cubic meter with an ITSL value of 0.1 micrograms per cubic meter.

According to the SDS, bis(2-(2-butoxyethoxy)ethoxy)methane makes up between 1% and 5% of the e-coat used in the process. With an e-coat product density of 9.01 lbs/gallon and using the lowest recorded monthly e-coat usage from 2021-2023 of 2,378 gallons/month, the emissions for bis(2-(2-butoxyethoxy)ethoxy)methane are estimated to be at least 214 lbs/month and thus exceed the Rule 290(2)(a)(ii)(a) limit of 20 lbs/month. As a result, the current e-coat coating is no longer exempt and is in violation of Rule 201 of the administrative rules promulgated under Act 451, and the facility will be receiving a violation notice for not meeting the requirements of this rule.

Crown Group Shelby does not have any back-up generators, cold cleaners, or boilers. The facility has a PTI (PTI No. 187-18) for a burn-off oven (EUBURNOFF) that is used to remove built up coatings on the metal racks used in the e-coat process. According to Mr. Nowak, the EUBURNOFF uses only natural gas for fuel.

PTI No. 187-18

Following the conclusion of the pre-inspection meeting, a facility walkthrough was conducted. We first were lead to the EUBURNOFF. During the visual inspection of the EUBURNOFF, I observed a device used to monitor the temperature of the primary and secondary chambers and a device to record the temperature of the secondary chamber. I noted that the primary chamber temperature was 844 degrees Fahrenheit and the secondary chamber temperature was 1460 degrees Fahrenheit. I requested temperature data records from June 2022 for review, however Mr. Nowak indicated that it would take some time to extract the data and said that he would email me when it was collected. In addition, Mr. Nowak mentioned that they have been having trouble with their temperature data logger since some of the files were corrupted. In an email sent to me on March 7, 2023, Mr. Nowak informed me that they were attempting to retrieve the data from the logger unit by sending it back to the manufacturer, as their attempts at downloading the data were unsuccessful. He went on to explain that this was the second time that they were unable to successfully download data that was not corrupted and as a result, they plan on pursuing a new data logger for which the quote for the unit was included as an attachment. The data blocks they were able to successfully download and save are for the following: April-July 2021, October-December 2022, and January-February 2023. I had Mr. Nowak send me the available records for 2022 and 2023. These records indicate that the EUBURNOFF is operating in a satisfactory manner. I provided some time for them to attempt to extract the data from June 2022 however they were unsuccessful at doing so. Failure to maintain temperature data records in a satisfactory manner is a violation of Special Condition (SC) VI.1 and 3 and the facility will be receiving a violation notice for these recordkeeping issues.

Next we were lead to the powder coating room. Two powder coating booths were observed in an enclosed room and the filters appeared to be properly installed and maintained in accordance with the AQD Rule 287(2)(d) exemption. We were informed that the air in the room gets filtered and re-circulated with no air escaping outside of the room during coating.

During our walkthrough of the facility, we were shown the metal racks that are used in the coating process and it was explained that only the metal racks that have a built up layer of coating on them are loaded in the EUBURNOFF. Outside of the facility the stack appeared to be unobstructed and no visible emissions from the EUBURNOFF were observed.

Based on the observations made during the inspection and the information provided in the pre-inspection meeting, the facility appears to be in compliance with the following permit conditions:

EUBURNOFF

SC I.1 No visible emissions were observed.

SC II.1 The only fuel used in EUBURNOFF is natural gas according to Mr. Nowak.

SC II.2 The permittee only processes cured coatings on metal racks in EUBURNOFF, according to Mr. Nowak. I was shown some of the racks that they process as an example.

SC II.3 None of the materials processed in EUBURNOFF contain halogens, the SDS for the coating shows it does not contain any halogens.

SC III.1 and 2 The only materials processed in EUBURNOFF are cured coatings.

SC IV.1 EUBURNOFF is equipped with a secondary chamber/afterburner. The afterburner is kept at a minimum of 1400 °F according to recently provided temperature data. In the data reviewed, it appears that once turned on the afterburner takes between 10-20 minutes to heat up completely then stays above 1400 °F for the duration of the process. The primary chamber isn't brought up to operating temp until the afterburner reaches 1400 °F.

SC IV.2 EUBURNOFF is equipped with an automatic temperature control for both the primary chamber and afterburner.

SC IV.3 EUBURNOFF is equipped with an interlock system, as described in the oven manual.

SC VI.2 Calibration records for the EUBURNOFF were provided. The K-type thermocouples were tested and found to be in range.

SC VI.4 Maintenance records for EUBURNOFF were available on-site, I reviewed but copies were not requested.

SC VI.5 The SDS for the coating processed in EUBURNOFF was provided.

SC VI.6 The manual for EUBURNOFF showed that it is equipped with an afterburner, temperature control for primary chamber and afterburner, and interlock system.

SC VII.1 (a) and (c) The permittee sent notice to the AQD of the stack height being raised to the 47.25 feet required by the permit, and the proof that EUBURNOFF was equipped with an interlock system.

SC VII.1(b) The facility did not install a device to record the temperatures of both chambers of EUBURNOFF before the inspection in August 2020. However, after the inspection, the permittee notified the AQD within 7 days of the installation of the temperature recorder, as required by this condition.

SC VIII.1 The exhaust stack for EUBURNOFF appeared to be unobstructed. And notice to the AQD stated the stack height was the permit required 47.25 feet.

SC IX.1(a) and (c) The permittee raised the stack height to 47.25 feet and installed the interlock system in EUBURNOFF before the required date of February 1, 2019.

SC IX.1(b) The permittee did not install the temperature recording device in EUBURNOFF before the required date of February 1, 2019. The facility was issued a violation for this condition as a result of the August 2020 inspection. The facility has since installed the temperature recording device. The violation has been resolved.

Conclusion

Based on the information obtained during the inspection, the company is in violation of PTI No.187-18, Special Conditions VI.1 and 3 and Rule 201. A violation notice for these violations will be issued. Upon evaluation of the e-coat coating, the e-coat material contains bis(2-(2-butoxyethoxy)ethoxy)methane, an ingredient whose emissions are estimated to exceed the Rule 290(2)(a)(ii)(a) limit of 20 pounds/month and as a result the use of the current e-coat coating is in violation of Rule 201.

NAME 

DATE 3/28/2023

SUPERVISOR 