

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

N767971306

FACILITY: RACK PROCESSING MICHIGAN LCC		SRN / ID: N7679
LOCATION: 3513 LOUSMA DR SE, WYOMING		DISTRICT: Grand Rapids
CITY: WYOMING		COUNTY: KENT
CONTACT: Dan Jozwiak , Supervisor		ACTIVITY DATE: 01/23/2024
STAFF: April Lazzaro	COMPLIANCE STATUS: Compliance	SOURCE CLASS: MAJOR
SUBJECT: Unannounced, scheduled inspection.		
RESOLVED COMPLAINTS:		

Air Quality Division (AQD) staff April Lazzaro conducted an unannounced scheduled inspection of Rack Processing Michigan LLC located at 3513 Lousma Drive SE in Wyoming. The purpose of the inspection was to determine the facility's compliance with state and federal air pollution regulations as well as Renewable Operating Permit No. MI-ROP-N7679-2023. Accompanying AQD staff on the inspection was Dan Jozwiak, Production Manager. Upon arrival at the facility, no smoke or odors were observed.

FACILITY DESCRIPTION

Rack Processing refurbishes metal racks used in the electroplating industry. The facility is located in a light industrial zone with residential homes approximately 1,000 feet to the west. The metal racks are fabricated by welding steel components together and then they are coated in plastisol. Metal racks are returned to the facility by customers to have the plastisol coating removed, metal repaired, and recoated in plastisol. The facility operates one natural gas-fired burn-off oven with afterburner controls, primer and plastisol dip coating application tanks with associated ovens, a sandblasting booth, and various metal fabrication equipment including welding units. The facility is considered a major source of hazardous air pollutants (HAPs) due to hydrogen chloride (HCl) emissions. The facility is permitted pursuant to Renewable Operating Permit No. MI-ROP-N7679-2023. In 2022, a new burn-off oven was installed and began operation pursuant to Permit to Install (PTI) No. 3-11D which was incorporated into the ROP upon renewal.

COMPLIANCE EVALUATION

Rack Burn-Off Oven (EUBURNOFF):

The company operates a Steelman rack burn-off oven to remove the existing plastisol coating from the metal racks that they refurbish. The primary chamber is operated around 430 °F and the cycle time on a batch of racks can range from 9 to 18 hours. The rack burn-off oven was not operating at the time of the inspection.

There is a secondary afterburner installed on the unit and a circular chart to record the temperature. Temperature records were requested, and records show that the afterburner is typically operated at or above 1,600 °F which is above the minimum temperature limit of 1,560 °F in the permit. The afterburner reaches the setpoint of 1,600 °F , and then when the main chamber burner ignites, the afterburner temperature dips dramatically before climbing again. It is noted that due to water sprays used to reduce flame-up, the temperature of the afterburner temperature will dip throughout the cycle. Mr. Jozwiak indicated that they may increase the oven temperature to ensure the temperature remains above 1,560°F

when the water sprays are activated. In addition, the company records on the circular chart, the number of water spray cycles that occurred during a batch and also the total oven run time.

In 2023, the company replaced the combustion fan. Incorrect fan design/specification information was provided to the company by the manufacturer causing incorrect flow and pressure. This fan issue caused problems maintaining the afterburner temperature above the required 1,560°F, and as such the company reported this as a deviation, and a Violation Notice was issued. The problem was corrected by the end of October 2023, and no new temperature deviations have been reported since then.

Records required by MI-ROP-N7679-2023 are being maintained, however the formatting needed improvement. This was discussed with the new facility consultant, and updated records were requested. The updated records were received timely.

Records were requested for the time period of January-December 2023, and the company provided additional data that went back to 2021. The permit states that the permittee shall not process more than 188,000 pounds of plastisol in EUBURNOFF per 12-month rolling time period, as determined at the end of each calendar month, and they shall not process more than 1,285 pounds of plastisol coating per batch processed. The company is tracking the amount of plastisol removed in EUBURNOFF by weighing the racks before and after they are processed. The records reviewed indicate compliance with the 188,000 pound limit in the permit. The highest 12-month rolling total period in 2023 was the period ending in September at 71,720 pounds. Records show that the highest amount of plastisol burned in a batch in 2023 was 482 pounds (3/8/2023) which is below the limit of 1,285 pounds in the permit. The company has not changed the plastisol used to coat the racks.

In addition, the company is maintaining 12-month rolling hydrogen chloride (HCl) emissions calculations. These calculations were based on the fluorine content of the coating and not the 2022 stack test data. Following a discussion with the company consultant, this was adjusted and updated records were received. HCl emissions for the period of February 2023 through January 2024 were 10.80 tons which is below the 29 ton per year limit in the permit.

Primer Dip Coating (FGCOATING):

After the racks are sandblasted, (additional details below) a soap solution is brushed onto the part clips and the racks are then coated with what a primer, that consists of a blend of solvents, primarily methyl ethyl ketone (MEK), and some resins. The primer operation consists of a 2,000 gallon rectangular dip tank containing solvent. The primer/solvent dip tank is not enclosed, however, there is an air handling system to allow solvent fumes to be vented to the ambient air. There are no exhaust filters, however, no solvent atomization is occurring.

The ROP contains conditions from the General Permit to Install (PTI) for Coating lines. According to company records total VOC emissions from the primer and plastisol coating operations were 3.90 tons for the time period of February 2023 through January 2024 which is below the 10 ton per line and 30 ton per facility limits contained in MI-ROP-N7679-2023. The primer by itself without the diluent (MEK)

contains 1.11 pounds of VOC per gallon. After noting that no primer had been added to that tank since August 2021, this was discussed with the consultant, and further detailed below. The company had adequate records to determine compliance with emission limits.

Preheat Oven (EU COATING):

After priming, racks are placed into a natural gas-fired pre-heat oven with a fuel rating of 1.2 MMBtu/hour. In the past, this unit has been listed as exempt from permitting under Rule 282(2)(b)(2)(i) and exempt from the ROP under Rule 214(4)(c), however the oven was identified in the General PTI application, and as such is part of that permitted emission unit. This stack was repaired after identifying structural issues during the previous inspection.

Plastisol Coating (EU COATING):

The heated racks are then dipped into a 2,000 gallon rectangular tank containing black plastisol and reducer. This dip tank was included in the General PTI as well, and this has been incorporated as such into the ROP. According to company records total VOC emissions from priming and plastisol coating operations were 3.88 tons for the time period of January-December 2023 which is below the 10 ton per line and 30 ton per facility limits contained in MI-ROP-N7679-2023.

Curing Oven (EU COATING):

After the final coat of plastisol, the racks are cured in a natural gas-fired oven with a heat capacity of 1.2 MMBtu/hour. In the past, this unit has been listed as exempt from permitting under Rule 282(2)(b)(2)(i) and exempt from the ROP under Rule 214(4)(c), however the oven was identified in the General PTI application, and as such is part of that permitted emission unit. The final cure in the oven is at 350 °F for about 35 minutes. During previous inspections, significant smoke was observed inside the plant, however that was not observed during this inspection. It is noted that there is no afterburner on this oven. It is also noted that the company stated in the General PTI application that there are HCl emissions emitted from this oven, however that was not further evaluated during this inspection.

FGSOURCE:

The company is maintaining records to demonstrate that VOC emissions for the permitted coating lines and all associated purge and clean-up operations at the stationary source were 3.88 tons which is below the 30 ton per year limit in the ROP. This value only includes emissions from FGCOATING, so emissions are the same as what is reported above in that flexible group. The limit is not a VOC Opt-out limit, as it only applies to the coating line and associated emissions as the limit originated in the General PTI for coating lines.

During the inspection records review, AQD staff noted that Rack Processing had not reported usage of the primer since 2021 and have only added MEK to that tank. This prompted discussions with the company regarding a possible modification to the process, and whether a tank that contains MEK is considered a coating by definition. It was determined that a tank that contains only MEK is not considered a coating. This was discussed with the company and the consultant. The company discovered that there had been a change made at the facility due to tank content sampling and

that Rack Processing does not intend to continue only adding MEK. Additional information was provided indicating that the contents of the tank are sampled and analyzed for solids content on a routine basis, and recent sampling showed that there were still solids from the primer present, indicating the tank was not solely comprised of MEK. Back in 2021, the tank had exceeded solids specifications due to too much primer content and has only very recently achieved the expected range. In several email exchanges, Rack Processing provided laboratory samples showing the solids sampling and indicated that they have no intention of switching to a full solvent dip tank. This will continue to be evaluated during future inspections. Rack Processing was also made aware that no modifications to the General PFI for Coating Lines can be made, and a regular PFI would be needed if a modification were to occur.

Miscellaneous:

Sandblasting:

After the racks come out of the burn-off oven the racks are sandblasted. The sandblasting booth is fully contained and internally vented. There are two baghouses used to collect particulate that is exhausted to the in-plant environment. This equipment is exempt under Rule 285(2)(i)(vi)(B).

No odor or visible emissions issues were noted at that time of the inspection, however Mr. Jozwiak has indicated that occasionally smoke is observed for a brief time from the burn off oven.

SUMMARY

Rack Processing was in compliance at the time of the inspection.

NAME April Lagare

DATE 04/05/2024

SUPERVISOR MM