

DEPARTMENT OF ENVIRONMENTAL QUALITY  
AIR QUALITY DIVISION  
ACTIVITY REPORT: Scheduled Inspection

N767951430

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: 11/19/2019
STAFF: David Morgan	COMPLIANCE STATUS: Compliance	SOURCE CLASS: MAJOR
SUBJECT:		
RESOLVED COMPLAINTS:		

At 8:15 A.M. on November 19, 2019, Air Quality Division (AQD) staff Dave Morgan conducted a 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-N7679-2018. Accompanying AQD staff on the inspection was Dan Jozwiak, Production Manger.

**FACILITY DESCRIPTION**

Rack Processing refurbishes part racks used in the electroplating process. The part racks are dipped in plastisol to protect the metal racks during the plating process. The company strips off the old plastisol coating on the racks, conducts maintenance and then recoats the racks with plastisol. The facility consists of a coating line, burn-off oven and other activities. The facility is considered a major source of hazardous air pollutants (HAPs) due to hydrogen chloride (HCl) emissions. The facility is covered under Renewable Operating Permit No. MI-ROP-N7679-2018.

**COMPLIANCE EVALUATION**

**Rack Burn-Off Oven (EUBURNOFF):**

The company operates a Steelman rack burn-off oven to remove the existing plastisol coating from 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. Typically the unit operates about once, sometimes twice per week. The 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. The company had temperature records on site which AQD staff reviewed. Temperature 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. It is noted that due to water sprays used to reduce flame-up, the temperature of the afterburner temperature will dip to around 1,560°F. 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.

Records required by MI-ROP-N7679-2018 were being maintained in accordance with the permit. From November 2018 through October 2019, 84,595 pounds of plastisol were burned which is well below the 188,000 pound limit in the permit. In addition, records show that the highest amount of plastisol burned in a batch was 1,147 pounds (6/14/19) which is below the limit of 1,285 pounds in the permit. The facility typically operates with an oven batch load from 900 to 1,000 pounds. The company is using the same Chemionics plastisol (with a chlorine content of 30%) used over the years.

In addition, the company is maintaining 12-month rolling hydrogen chloride (HCl) emissions calculations. These calculations are based on stack testing that was completed in 2017. HCl emissions for the period from November 2018 through October 2019 were 15.22 tons which is below the 29 ton per year limit in the ROP.

No additional testing was requested as the last test was completed in November 2017. The company will need to retest the process by November 2022.

The company has sufficient maintenance records on the burn-off oven to determine compliance, however, documentation could be improved. The burn-off oven stack was replaced in September 2019 due to corrosion. Stack height is maintained at 53' above ground which meets the minimum height requirement of 51'. According to the company, the thermocouples were last calibrated in November 2019.

**Sandblasting (EUBLAST):**

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

**Primer Dip Coating (FGCOATING):**

After the racks are sandblasted, a soap solution is pasted on the part clips and the racks are then coated with a primer. The primer coating operation, consists of a 2,000 gallon rectangular dip tank containing a primer coating and a diluent mixture. Historically the diluent that makes up the majority of the volume of the total primer coating has been methyl ethyl ketone (MEK), however the company is adding more acetone to the mixture to reduce VOC emissions. It is likely that switching MEK to acetone would not constitute a meaningful change in emissions under AQD Policy and Procedure, AQD-025. The primer dip tank is not in an enclosed booth, 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 coating atomization is occurring. At the time of the inspection, the primer tank was not operating and the lid was closed on the dip tank.

According to company records from November 2018 through October 2019, total VOC emissions from priming operations (including primer coating and added MEK) were 4.52 tons which is below the 10 ton per line and 30 ton per facility limits contained in MI-ROP-N7679-2018. The primer coating itself without the diluent contains 1.11 pounds of VOC per gallon. The company had adequate records to determine compliance with emission limits. It is noted that the company is reformulating the primer coating to reduce the VOC content of the coating by replacing some VOC components with acetone which is not defined as a VOC. See attached Safety Data Sheet for SD-2461.

**Preheat Oven (EU-PREHEAT):**

After priming, racks are placed into a natural gas-fired pre-heat oven with a fuel rating of 1.2 MMBtu/hour. This unit is exempt from permitting under Rule 282(2)(b)(2)(i) and exempt from the ROP under Rule 214(4)(c).

**Plastisol Coating (EU-PLASTISOLDIP):**

The heated racks are then dipped into a 2,000 gallon rectangular tank containing black plastisol and reducer. The tank is exempt from permitting under Rule 291(1). The company used to apply two coats of plastisol but are now only doing one coat and therefore there is no flash curing. Plastisol from 275 gallon bulk containers and a small amount of reducer is added to the tanks on a monthly basis. The company is using a Chemionics Corporation plastisol and plasticizer reducer that have no VOCs.

**Curing Oven (EUCURE):**

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. This unit is exempt from permitting under Rule 282(2)(b)(2)(i) and exempt from the ROP under Rule 214(4)(c). The final cure is conducted around 350 °F for about 35 minutes. At the time of the inspection, significant smoke was observed inside the plant. According to Mr. Jozwiak, the damper to the oven exhaust had to be adjusted for adequate oven operation. Also, he indicated smoke is released into the plant when the loading doors are open. This smoke had not been observed in previous inspections and may indicate a problem with oven operation. It is noted that there is no afterburner on this oven.

**FGSOURCE:**

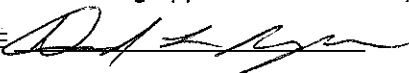
The company is maintaining records to demonstrate that VOC emissions for the source were 4.52 tons which is below the 30 ton per year limit in the ROP.

**Micellaneous:**

No odor or visible emissions issues were noted at that time of the inspection.

**SUMMARY**

Rack Processing appears to be in compliance with all applicable requirements.

NAME 

DATE 12/14/19

SUPERVISOR 