

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

B365859785

FACILITY: Martinrea Bishop Circle		SRN / ID: B3658
LOCATION: 10501 M-52, MANCHESTER		DISTRICT: Jackson
CITY: MANCHESTER		COUNTY: WASHTENAW
CONTACT: Michael Zobel , EHS Manager		ACTIVITY DATE: 09/09/2021
STAFF: Mike Kovalchick	COMPLIANCE STATUS: Non Compliance	SOURCE CLASS: SM OPT OUT
SUBJECT: Company remains out of compliance with Rule 201 violations, no MAERS report and stack issues.		
RESOLVED COMPLAINTS:		

OPT-OUT Source for HAPS

Facility Contacts

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Purpose

On September 9, 2021, I conducted an announced compliance inspection of Martinrea Industries, Inc.-Bishop Circle Assembly (Company) located at 10501 M-52, Manchester Michigan. The purpose of this inspection was to determine the Company's compliance with the requirements of the federal Clean Air Act; Part 55, Air Pollution Control, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended (Act 451) and the associated Air Pollution Control Rules, conditions of Permit to Install (PTI) 61-14 and to evaluate PTI application 2021-00130.

Facility Location

The facility is in rural area on the outskirts of Manchester. A collection of residential homes are located on the NW side of the facility as close as 200 feet from the main building.

Background

This facility was last inspected on February 10, 2016 and found to be in out of compliance.

Martinrea is a synthetic minor opt-out source of hazardous air pollutants (HAP) and minor for all other source categories.

This facility was formerly the site of a Johnson Controls manufacturing plant. An inspection dating 2/6/14 resulted in a Violation Notice (VN) being sent to the Company for failure to obtain a PTI. The rubber extrusion process was determined not to meet the exemption in Rule 286(a) for plastic extrusion because of the potential presence of Hazardous Air Pollutant (HAP) containing materials. The VN was resolved with the application and issuance of PTI 61-14, which includes material throughput limits on HAP containing materials and a source-wide flexible group that limits individual and aggregate HAP emissions.

Due to the conditions set in PTI 61-14, specifically the requirement to limit HAP below major source thresholds, this source is classified as a Synthetic Minor Opt-Out source and required to submit annual MAERS reports.

On May 5, 2021, a VN was sent to the Company for failure to submit the required MAERS report. (As of the date of this report, this VN remains unresolved mostly due to the MAERS computer system being down and the Company is unable to submit their report.)

On July 20, 2021, a VN was sent to the Company based on information provided in a PTI application submitted to AQD on July 1, 2021. This permit application was submitted to update emission unit descriptions, increase annual throughput limitations for EURUBBEREX and install (2) 200-BHP boilers and one (1) steam autoclave, to increase the efficiency of production. However, per permit application information, the installation for this unpermitted modified process began on July 10, 2020, and was completed on October 25, 2020, without first receiving a PTI.

The facility currently operates seven (7) molding/extrusion lines, include 5 plastic injection molding/extruder nylon core tubing lines, 2 extrusion lines, 2 electric autoclaves and one natural gas-fired curing oven to produce various automotive fuel, vapor and brake hoses, tubing and assemblies. These manufacturing processes use solid(plastic, rubber) and liquid (coatings, sealants, heat transfer fluids) raw materials in a variety of forming and finishing processes. The Company operates the following processes at the facility that have the potential to emit air contaminants:

-Plastic injection molding lines

-Nylon extrusion lines where an adhesion promoter is applied

-Rubber extrusion lines

-Coating processes

-Nylon forming process using a heated glycol bath

5 of the extrusion lines are used to produce nylon tubing and hoses of various lengths and properties. The products manufactured use various polyamide (nylon) pellets that are molded and extruded into a hose shape. 3 of these lines operate full time, while the other 2 operate about 50% of the time. The lines have the capacity to use up to 1 million pounds of polymer per calendar year.

A thin rubber layer is extruded over the nylon core. An adhesion promoter (Tite-R-Bond Adhesion Promoter) is first applied to the nylon core by waterfalling the coating over the surface of the nylon tube. The coating air-dries in the general facility environment before being covered by a rubber layer. Approximately 90-95% of the extruded nylon-core product is shipped off-site as coiled tubing to customers or other Martinrea facilities. The remainder is formed on-site in the Nylon Forming process. None of the nylon extruded product is sent to the autoclaves or hot air cure oven.

2 extrusion lines are used to produce rubber tubing and hoses. The rubber products manufactured use either chlorinated polyethylene (CPE) polymer-based rubber or Vamac

ethylene acrylic elastomer (AEM)-based rubber. These materials are resistant to heat, oils and fluids and are ideal for automotive applications.

Rubber slab stock (lengths of flexible rubber) is received from suppliers and used in the extruders to produce the lengths of extruded hose and tubing. The rubber slab stock is not processed at the facility prior to its use in the extruder (no milling, grinding, blending, etc.)

In the first step of the rubber extrusion process, a polypropylene core is produced using a type of plastic injection molding. The core is used for structural support of the tubing while it is being formed (extruded). The rubber slab stock is then heated to the point where it can be extruded onto the polypropylene core. Overheating of the rubber would cause deterioration to the final product. The extruders have no active exhausts and any emissions generated by the extruders are released to the in-plant environment. At the end of the extruder line the polypropylene core is moved and ground into pellets for reuse. The grinder is equipped with a dust collector and any emissions are released into the in-plant environment.

The extruded rubber is then formed and/or cured in processes where:

- Extruded tubing is loaded into one of two electric autoclaves for curing

- Lengths of rubber hose are put onto templates and cured in a natural gas fired curing oven

- All of the extruded rubber hose are cured in one of two autoclaves. Approximately 50% of the product is also sent to the natural gas curing oven. The exhausts from the 2 electric autoclaves are combined and released to the ambient air through an exhaust stack. The natural gas fired oven has 2 exhausts. One exhaust is from the oven itself. Another is attached to a hood that is located just above the entrance to the oven where the doors swing up.

As part of the recent modifications, Production rate through the extrusion has increased in capacity from 900,000 lb/year to 3 million lb/year.

As part of this modification, a new curing system has been added. This includes the addition of two 200 boiler horsepower natural gas boilers where one will be used for production and another for back-up, and a steam autoclave unit and trolley system.

PTI Exempt equipment at the facility includes 2 small coating booths exempt pursuant to Rule 287 (c), nylon forming process exempt per Rule 286(d), and chemical storage exempt per Rule 284. There is also some exempt equipment at the Bishop Research and Development building. This includes a 20 HP boiler, and a small autoclave,

Inspection

I arrived and met with Michael Zobel at a conference room. Summer Hitches was also present. She is acting as consultant for the Company for the PTI application.

We conducted a brief tour of the facility that included walking past extrusion lines, the 2 electric powered autoclaves, the newer steam autoclave, 2 natural gas boilers, the curing oven, a small exempt coating booth and a visit to the roof.

Only minor intensity odors noted inside the facility and on the roof. The odors on the roof appeared to be associated with the oven and autoclaves. The odor was unpleasant rubber type smell.

The 2 older electric powered autoclaves were not in operation during the inspection but were still warm. I was given the impression that they will be using the newer steam autoclave as much as possible instead. These autoclaves have a hood above each entrance door which exhausted outside. (See attached photo.)

The newer steam autoclave had hoods located both at the front and back doors of the unit which exhausted outside. The steam was provided by two 200 HP natural gas fired boilers which were also observed.

The conventional oven had a set point of 400 degrees F. It had 2 stacks associated with it. One from the hood located above where the doors open to the oven and smaller one to the oven itself. The smaller one had not been described in the recent permit application. A Company representative indicated that the oven operates on a 45-minute cycle. When the doors are open, a lot of smoke escapes out and is drawn into the hood for about a 15-minute period. This was not observed during the inspection. See attached photo of the front of the oven.

Next, we visited the roof which was accessed by a ladder inside the building. The roof was in good shape including all the ventilation equipment observed. See attached photos. However, rain caps were observed on the autoclave and oven stacks. These had not been described in either the previous permit or the more recent permit application. Furthermore, smoke was observed coming out a small oven stack also with a rain cap which was concerning. Opacity was estimated to be at 10 to 15%. It was not clear at what point in the oven cycle the smoke was occurring in. This suggests the possibility that higher opacity could be generated at a different time in the cycle such as when the rubber is first added to the oven. Emissions from the other oven stack were not observed as the oven doors were closed during the inspection.

Compliance Evaluation

I requested various records from the Company on 9/8/21 prior to the inspection for one emission unit and one flexible group. The records were reviewed for compliance with the PTI. Here is the request that was made:

“Please provide the following records via email to kovalchickm@mi.gov no later than September 16th. The records request includes all records mentioned below for the time period July 2020 to the end of July 2021.

1. For EURUBBEREX:
 - a. The type and pounds of rubber processed on a calendar month basis.
 - b. The pounds of rubber processed on an annual basis per 12-month rolling time period as determined at the end of each calendar month.
2. For the autoclave process in EURUBBEREX:
 - a. The pounds of Polychloroprene W Type rubber processed on a calendar month basis.

- b. The pounds of Polychloroprene W Type rubber processed on an annual basis per 12-month rolling time period as determined at the end of each calendar month.
3. For the hot air cure process in EURUBBEREX:
 - a. The pounds of emulsion SBR rubber processed on a calendar month basis.
 - b. The pounds of emulsion SBR rubber processed on an annual basis per 12-month rolling time period as determined at the end of each calendar month.
4. **For FGFACILITY:**
 - a. **Individual and aggregate HAP emission calculations determining the monthly emission rate of each in tons per calendar month.**

A response was received on 9/15:

1. For EURUBBEREX:
 - a. The type and pounds of rubber processed on a calendar month basis. **CPE – roughly 250,000 per month. This will vary depending on releases.** b. The pounds of rubber processed on an annual basis per 12-month rolling time period as determined at the end of each calendar month. **Roughly 3,000,000 pounds. This will vary depending on releases.**
 2. For the autoclave process in EURUBBEREX:
 - a. The pounds of Polychloroprene W Type rubber processed on a calendar month basis. **Not familiar with the callout, please explain.**
 - b. The pounds of Polychloroprene W Type rubber processed on an annual basis per 12-month rolling time period as determined at the end of each calendar month. **Not familiar with the callout, please explain.**
 3. For the hot air cure process in EURUBBEREX:
 - a. The pounds of emulsion SBR rubber processed on a calendar month basis. **We don't use emulsion SBR rubber**
 - b. The pounds of emulsion SBR rubber processed on an annual basis per 12-month rolling time period as determined at the end of each calendar month. **We don't use emulsion SBR rubber**
 4. For FGFACILITY:
 - a. Individual and aggregate HAP emission calculations determining the monthly emission rate of each in tons per calendar month. **This should come from Impact.**

This response shows that the rubber process has changed significantly since the previous PTI. (The Company has already been cited previously for a Rule 201 violation for this issue.) The lack of HAP emission calculations is a new issue.

Compliance Status and Recommendations

I have determined that this facility is out of compliance with PTI 61-14 for the following:

Rule/Permit

Process Description	Condition Violated	Comments
PTI 61-14 emission unit EURUBBEREX (Autoclaves)	PTI 61-14 Special Condition VIII. STACK/VENT RESTRICTION(S)- 1. SVAUTOCLAVE1 2. SVAUTOCLAVE2	Combined autoclave stack does not vent unobstructed vertically upward; has rain cap and otherwise is not consistent with Stack/vent parameters described in the permit.
PTI 61-14 emission unit EURUBBEREX (Oven)	PTI 61-14 Special Condition VIII. STACK/VENT RESTRICTION(S)- 3. SVOVEN	Stack does not vent unobstructed vertically upward; has rain cap. A second oven stack not previously identified as part of the original permit application also has a rain cap.
PTI 61-14 Flexible Group FGFACILITY	PTI 61-14 Special Condition VI. Monitoring/Recordkeeping 2.a, b, c, d, e.	Company failed to provide require records for calculated HAP emissions.

The Company appears to be in compliance with all other permit requirements. A Violation Notice (VN) will be sent to the Company. They will be given 21 days to respond with a compliance plan.

In addition to the VN, the Company is being required to modify or resubmit their PTI application that is currently under review to be consistent with stack configurations that were observed during the inspection. Furthermore, as part of the PTI application, the Company is being required to provide a demonstration that Rule 301 20% opacity standard can be met for their oven. This will consist of Method 9 readings taken during the oven cycle period for both oven stacks.



Image 1(Electric Autoclaves) : 2 old autoclaves with a hoods that go to a combined stack with raincape.



Image 2(Autoclave Oven) : 2 larger stacks from steam autoclaves. Smaller stack from hood above oven. Rain caps on all.



Image 3(Oven stack) : Oven stack showing 10% opacity smoke.



Image 4(Oven doors) : Oven doors with hood above it

NAME Mike Kovalchik

DATE 9/21/21

SUPERVISOR [Signature]