

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

N569665249

<b>FACILITY:</b> ARMADA RUBBER MANUFACTURING CO		<b>SRN / ID:</b> N5696
<b>LOCATION:</b> 24586 ARMADA RIDGE RD, ARMADA		<b>DISTRICT:</b> Warren
<b>CITY:</b> ARMADA		<b>COUNTY:</b> MACOMB
<b>CONTACT:</b> Craig Tobey , Operations/Environmental Manager		<b>ACTIVITY DATE:</b> 11/01/2022
<b>STAFF:</b> Sebastian Kallumkal	<b>COMPLIANCE STATUS:</b> Compliance	<b>SOURCE CLASS:</b> MINOR
<b>SUBJECT:</b> Annual Inspection		
<b>RESOLVED COMPLAINTS:</b> C-22-01737, C-23-00034		

On Tuesday, November 1<sup>st</sup>, 2022, Michigan Department of Environment, Great Lakes, and Energy-Air Quality Division (EGLE-AQD) staff Sebastian Kallumkal conducted an unannounced annual inspection at Armada Rubber Manufacturing Co., located on 24586 Armada Ridge Rd., Armada Twp., Michigan. The purpose of the inspection was to determine compliance 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 (MEGLE-AQD) Administrative Rules; and Permit-to-Install No. 242-03A and to conduct odor observations in response to odor complaints (Complaint Numbers C-22-01737 and C-23-00034) related to facility's operations.

While I drove from 24040 Armada Ridge Road to the facility, I conducted odor observations with the front windows open. I did not smell any objectionable odor along this route.

I arrived at the site parking lot around 11:20 AM. I did not observe any objectionable odor in the parking lot. At the facility, I met Craig Tobey, Operations/Environmental Manager in the facility's operations area. I introduced myself, provided credentials and stated the purpose of the inspection. He agreed to accompany me for a facility inspection.

**Armada Rubber Manufacturing Company** compounds and manufactures rubber parts such as door bushes, bumpers, grommets, washers, sleeves, etc. used in automobiles and appliances using natural or synthetic rubber products and other ingredients such as oils, chemical additives, fillers, extenders, cross links (sulfur, peroxide), etc. The facility uses many formulations and manufactures products of different hardness. It receives the rubber ingredients in pails. The process includes:

1. Weighing of ingredients such as chemical additives, oil, raw rubber and/or synthetic rubber polymers, fillers (e.g., Carbon black), etc. according to the formulation recipes. There are two weight stations on site. The exhausts from both weigh stations are vented to dust collector baghouse.
2. The weighed materials are sent to a mixing station. The weighed materials and other ingredients are mixed into a slimy chunk. The mix station exhaust is vented to the same dust collector baghouse.
3. The slimy chunk is conveyed to roll mill (2 roll mills: Cooling Mill and Finish Mill) to make rubber sheets.
4. In the cooling mill, the slimy chunk is rolled into sheets and cooled off.
5. In the finish mill, the sheets are made into desired thickness.
6. Afterwards, talc powder is applied to the sheets by O-Matic 2000 machine. The powder application will prevent the rubber sheets from sticking to each other. The sheets are cut in the cutting mill (1 unit).

7. Sheets are placed in injection molding presses (transfer molding) where parts are formed and cured in the mold or in the injection presses to make larger parts.
8. The molded and cured rubber parts are deburred in cryogenic deburring machines (2 units) using liquid nitrogen or in cryogenic poly beaded blasting machines (2 units).

Dust generated from the weight stations and the mixer is controlled by a pulse jet dust collector, which consists of 99 bags. The dust collector is located outside the building. Dust collected from the collector hopper is reused in the process.

He accompanied for an inspection of the facility. The materials are received in pails. We visited materials weighing area. They have two down draft weigh stations. One is for weighing powdery ingredients and other one for weighing blocks of natural or synthetic rubber. The exhausts from the weigh stations are vented to the baghouse located outside. At the time of the inspection, employees were not weighing materials. He told me they usually weigh materials for current day's processing on the previous day.

Next, we visited the mixing area. The mixer was not operating at that time. The exhaust from mixer is vented to the baghouse located outside. Next, we visited the milling area (2 roll mills: Cooling Mill and Finish Mill). These were operating at the time of my inspection. This is where the slimy chunk is transformed into sheets of various thicknesses. The cooling mill makes the slimy chunk into sheets and finish mill shapes the sheets into desired thicknesses. The finished roll goes to talc powder machine and talc is added to prevent adhesion between sheets. The talc applied roll is cut into sheets. The dust from the talc process is exhausted to a local dust collector vented in the general in-plant area. This process could be exempt from permit to install pursuant to Rule 285(2)(I)(vi).

The cut sheets are tested for desired properties. These sheets are feedstocks for the transfer molding or injection molding presses where parts are formed and cured in the mold (cure pad).

The facility has about 49 transfer molds. The facility uses the Rule 201 exemption pursuant to Rule 285(2)(I)(vi)(B) for this rubber transfer molding process. Some of the molds use vertical knockout and some use horizontal knockout pads. I observed fumes from a couple of vertical knockout pads. Craig told me that these fumes are from heated rubber during molding. I did not observe objectionable odor of high intensity inside the plant area. They use three types of mold release agents in the molds. The waste liquid materials are hauled offsite by Michigan Petroleum Technologies, Port Huron. Fully cured waste rubber materials are recycled through American Recycling in Owosso, Michigan.

Craig roughly provided usage of mold release agents, and other usage data, via emails, on Friday, November 4<sup>th</sup>.

#### 1/1/2022 to 10-31-2022

Stoner, RR5 Hot – 340 gallons

Chem Trends, Monocoat E-304 – 110 gallons

Stoner, Endurance A353 – 799 cans X 10 OZ X 1 gal/128 oz) = 62.42 gal

**RR-5 Hot EF-1/G451 Releasomers Mold Release, Usage = 3051 pounds; From SDS-No carcinogens; listed compounds have IRSL more than 2.0 ug/m3.**

Density = 0.88 x 8.34 = 7.34 lb/gal; VOC = 80-100 % = 7.34 lb/gal;

VOC Emissions = 2495 lb/10 months = 2994 lb/year

**Mono-Coat E304 Mold Release;** Usage = 1120 pounds; From SDS- Carcinogenicity- No known significant effects or critical hazards; listed compounds have IRSL more than 2.0 ug/m<sup>3</sup>.

Density = 0.79 x 8.34 = 6.6 lb/gal; VOC = 100% (based on volatility; no VOC% data specified in SDS) = 6.6 lb/gal; VOC Emissions = 726 lb/10 months = 871.2 lb/year

**A353 Endurance Mold Release;** Usage = 62.42 gallons

Density = 0.71 x 8.34 = 5.92 lb/gal; VOC = 100% = 5.92 lb/gal; VOC Emissions = 369.61 pounds lb/ 10 months = 443.5 lb/year; From SDS- Carcinogenicity- No known significant effects or critical hazards; listed compounds have IRSL more than 2.0 ug/m<sup>3</sup>.

The process (use of mold release agents) appears to be exempt from permit to install requirements pursuant to R336.1290(2)(i) which, in part, required the emission unit or process to have less than 1000 lb VOC emissions per month; and only emit non-carcinogenic VOCs. **The facility needs to evaluate the exemption status based on the usage and chemicals used.**

Next, we visited the four cryogenic deburring machines. The dust and N<sub>2</sub> fumes are exhausted through an internally vented dust collector. Two of the cryogenic deburring machines (basket flashers) are shot blasters which use beads to knockout imperfections of the parts while the two use barrel tumblers to clean the parts. The cleaned parts are weighed and shipped out.

In this area, facility has two injection transfer molding process equipment which forms parts from rolls that cannot be formed in the transfer molding machines.

The facility has two bead blasters (1 plastic bead and 1 glass bead) to clean the molds, tools and cure pads. The dust from this process exhausted through an internally vented dust collector. This process could be exempt from permit to install pursuant to Rule 285(2)(I)(vi) (B).

Next, we visited the cold cleaner. It appears to be being used. The cover was kept closed and the R611/R707 operating procedure was posted nearby on the wall.

Next, we visited the baghouse dust collector located outside the building. The dust collector area appeared to be clean. I didn't see any corrosive appearance on the collector; nor did I hear any air infiltration from the control. The dust collector was operating at that time. The control has been equipped with a Magnehelic gage as well as an electronic gage to monitor pressure drop continuously. At the time of the inspection, the baghouse was operating. The Magnehelic gage was reading 4.5"WC.

According to Craig, there is an alarm associated with the pressure drop readings. The operations room computer monitor will show a visual sign when the pressure drop goes low. If that happens, the process will be shut down manually.

The baghouse hopper is emptied twice a month. The bags are inspected every year using a bag dye penetrant test. If bags are defective, they are replaced. They are keeping records of baghouse maintenance (monthly, semi-annual and annual) and the pressure drop readings. The calibration for the pressure drop monitor is conducted annually. The submitted calibration certificate shows that a new monitor was installed on February 4, 2022 and calibrated on July 22, 2022. The company keeps daily records of the pressure drop (electronically) and monthly usage of rubber compound #14 & #15 as required by the permit. In the PTI, the Compound #14 and Compound #15 usages are limited each to 220,000 pounds per year based on a 12-month rolling period as determined at the end of each calendar

month. From company's record, for the week of November 8 through 12<sup>th</sup>, the pressure drop of the dust collector was about 4-5" WC. The 12-month rolling time period material usage for compound #14 was 31,317 pounds as of October 2022 and that of Compound #15 was "0.0 pound as of as of October 2022. Compound #15 was last used in January 2020. Facility mailed the materials usage records, SDS for the components, differential pressure readings and monitor calibration data in a flash drive (attached to the report).

The facility's emergency generator is a natural gas fired, Cummins, 45 KW, (HP=97 gross continuous/120 gross range), installed in 2003. This generator is used as backup for the office area. An existing commercial emergency generator is not subject to NESHAP ZZZZ pursuant to 40 CFR 63.6586(f)(2).

This facility is an area source for hazardous air pollutants (HAP) with potential to emit less than 10 tons per year (TPY) of single HAP and 25 TPY of aggregate HAPs. This reciprocating internal combustion engine (RICE) located at an area source of HAP is considered existing because it was installed in 2003 prior to June 12, 2006. Facility needs evaluate applicability of National Emission Standards for Hazardous Air Pollutants for RICE (area Source MACT-40 CFR 63, Subpart ZZZZ) for this RICE.

After the 2021 inspection, the facility's operations were evaluated and the NAICS code was updated. Facility's previous NAICS code was 325212 (Synesthetic rubber manufacturing). This facility does not produce synthetic rubber. It manufactures Rubber and synthetic rubber products, Therefore, the NAICS code was change to 326291 (Rubber Product Manufacturing for mechanical use) to correctly identify the facility's processes.

During the post-inspection meeting, we discussed the records that I needed to evaluate facility's compliance. Because this was an unannounced inspection, I allowed him to provide the records in a week (received records via email on 11/4/2022). The facility has 59 employees, and operates 5 days per week, 1 shift (8 hrs). He told me that there was no process change occurred at the facility since the last inspection.

After the onsite inspection, I conducted odor observations, from 12:20 PM to 1:00 PM, on foot, along Armada Ridge Road. First, I walked along Armada Ridge towards Omo Road (East). Then I walked west to 24040 Armada Ridge Road, back to facility's backyard near the pond, along the berm, to Omo Road and back to facility's parking lot. I did not observe any objectionable odor along these routes.

Armada, Michigan ([www.wunderground.com](http://www.wunderground.com))

Weather Data: Daily Observations: Nov. 1, 2022

Time	Temperature	Wind	Wind Speed	Condition
11:53 AM	59 °F	SW	7 mph	Fair
12:53 PM	60 °F	W	9 mph	Fair
1:53 PM	62 °F	WNW	6 mph	Fair

Next, I drove to complainant's residence with the car's front window open. I did not observe any objectionable odor during the drive. I also conducted odor observations

in front of the complainant's residence. I did not observe any objectionable odor at that time. I rang the calling bell, and a person came to see me. The complainant was not at home. So, I explained odor observations to that person and requested to convey it to the complainant. The person agreed to do so.

**Conclusion:** Based on the inspection and records review, the facility appears to be in compliance with PTI No. 242-03A requirements and other applicable air quality regulations.

During the odor observations, I did not observe any objectionable odor with intensity, frequency or duration which may constitute a violation of Michigan Administrative Rule 901 (R336.1901). Further odor observations would be conducted should the AQD receive more complaints. These complaints are considered "RESOLVED" at this time.

NAME Sebastianykallemkal

DATE 11/07/2022

SUPERVISOR Joyce