

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

N741630451

FACILITY: Green Polymeric Materials, Inc		SRN / ID: N7416
LOCATION: 6031 JOY RD., DETROIT		DISTRICT: Detroit
CITY: DETROIT		COUNTY: WAYNE
CONTACT:		ACTIVITY DATE: 08/03/2015
STAFF: Jorge Acevedo	COMPLIANCE STATUS: Compliance	SOURCE CLASS: SM OPT OUT
SUBJECT: Scheduled Inspection		
RESOLVED COMPLAINTS:		

MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
 AIR QUALITY DIVISION
 INSPECTION REPORT

COMPANY NAME : Recycled Polymeric Materials
 FACILITY ADDRESS : 6031 Joy Road , Detroit 48204
 STATE REGISTRAT. NUMBER : N7416
 SIC CODE :
 EPA SOURCE CLASS :
 EPA POLLUTANT CLASS :
 LEVEL OF INSPECTION : PCE
 DATE OF INSPECTION : 8/3/15
 TIME OF INSPECTION : 10:30 AM
 DATE OF REPORT : 08/10/15
 REASON FOR INSPECTION : Scheduled Inspection
 INSPECTED BY : Jorge Acevedo
 PERSONNEL PRESENT : Eric McKenzie, Plant Manager
 FACILITY PHONE NUMBER : (313) 957-6352
 FACILITY FAX NUMBER : (313) 867-3831

[Empty box for inspection narrative]

INSPECTION NARRATIVE:

On August 3, 2015, I conducted a partial compliance evaluation of Green Polymeric Materials. It was not raining at the time I arrived near the facility. I did not detect any odors as I surveyed the facility prior to entering the parking lot. I arrived at 10:30 AM and met with Eric McKenzie, Plant Manager. I explained to Mr. McKenzie the purpose of the visit. I asked for any updates since the last inspection. The company was purchased and renamed. The new company name is Green Polymeric Materials. The process has essentially stayed the same. They have replaced some of the solvents and mold release agents for less toxic chemicals. Their changes have resulted in fewer emissions. At the time of my inspection, Line 1 was down. Mr. McKenzie explained that the plan was to rebuild it and possibly operate it next year.

I asked for records, which are required by PTI 49-05A, and reviewed them. The records were current and appeared to show that the company was meeting its emission and material limits.

After talking to Mr. McKenzie regarding the operations, we walked through the facility so that I could conduct my inspection. We walked onto the plant floor. I observed the four injection molding lines. As Mr. McKenzie explained earlier, I observed Line 1 and could see that it was down for repairs. Mr. McKenzie explained that

there are two shifts, M-F, but that the afternoon shift is much smaller than the morning shift. The lines are continuously moving with the open molds which can be switched at any time, depending on production needs. A mold release agent is sprayed manually or by an automated sprayer. The guns used manually or by robot are HVLP guns. Mr. McKenzie explained that one of the changes he made since becoming Plant Manager was that he now requires the filters for the booths to be changed three times a day. The area where the mold release agent is sprayed is vented to the exhaust stack. The mold is opened and a mixture of Methylene Diphenyl Diisocyanate and polyol is sprayed into the mold. The reaction is an exothermic reaction. The mold is closed and the reaction takes place. The reaction takes about five minutes. Depending on the specified temperature, the chamber is cooled or heated to regulate the temperature of the mold. As it goes around the line, the molds are opened and the rubber product is taken out and the mold is cleaned as it is prepared for the next product. The lines are exhausted through a stack. I observed filters on all of the molding lines.

We then walked to shipping and receiving area. I observed raw materials and final products being stored. Raw materials were either in totes or barrels. The barrels were covered. We then went to the area where the carbon black and catalyst and polyols are mixed. The mixing process takes approximately six to seven hours including prep time. The mixing is controlled by a fabric filter, which is exhausted into the building. The fabric filter system monitors differential pressure and sounds an alert when the drum gets to the required level. The carbon black collected in the drum can be reused according to Mr. McKenzie. The facility has not had to discard the solid material collected by the fabric filter.

We finished observing the molding lines in process. After viewing the production process, we came back inside and discussed the inspection in their conference room. I asked for records and received records at the time of the inspection. I left the facility at 11:20 AM.

FACILITY BACKGROUND:

Green Polymeric Materials is involved in production of parts for the auto industry. They have only been operating at the Joy Road facility since January 2002.

COMPLAINT/COMPLIANCE HISTORY:

There have not been any citizen complaints registered nor violations issued against RPM.

OUTSTANDING CONSENT ORDERS:

None

OUTSTANDING LOVs

None

OPERATING SCHEDULE/PRODUCTION RATE:

Green Polymeric Materials operates two shifts, five days a week.

PROCESS DESCRIPTION:

The only process involved at Green Polymeric Materials is reaction injection molding. At this facility, two components, polyol and Diphenylmethane Diisocyanate, are used to produce the parts. Before the process takes place, the polyol is blended with recycled tires. The polyurethane products uses 25% post-consumer crumb rubber. The mixture is then injected into the mold along with Diphenylmethane Diisocyanate. An exothermic reaction takes place and the mixture expands inside the mold to form the particular mold. The entire curing process takes approximately five minutes.

Once the products are finished curing, the final products are removed from the mold. The excess polyurethane is

trimmed and the product is packaged and shipped off.

EQUIPMENT AND PROCESS CONTROLS:

Green Polymeric Materials has four molding machines, each of which are vented to the atmosphere.

APPLICABLE RULES/PERMIT CONDITIONS:

Permit to Install 49-05A was issued on March 1, 2010. Compliance with the permit conditions are evaluated below.

The following conditions apply to: EURRPE

Emission Limits

	Pollutant	Equipment	Limit	Time Period	COMPLIANCE DETERMINATION
1.1	VOCs and Exempt Solvents Combined*	EURRPE	59.9 tpy	12-month rolling time period as determined at the end of each calendar month.	COMPLIANCE- Highest 12 month VOC emissions over the last year was 15.2 TPY.
*Combined VOC and exempt solvent emissions shall be computed for purposes of determining compliance with the emission limit.					

Material Limits

	Material	Equipment	Limit	Time Period	COMPLIANCE DETERMINATION
1.2a	Foam Production	EURRPE	2,820,000 lbs/yr	12-month rolling time period as determined at the end of each calendar month.	Compliance- Highest 12 month foam production over the last year was 1,490,784 lbs/yr.
1.2b	Flush Solvent Usage, minus water	EURRPE	33,500 lbs/yr	12-month rolling time period as determined at the end of each calendar month.	Compliance- Highest 12 month flush solvent usage over the last year was 2571 lbs/yr.
1.2c	Mold Release Agent Usage	EURRPE	80,000 lbs/yr	12-month rolling time period as determined at the end of each calendar month.	Compliance- Highest 12 month mold release agent usage over the last year was 32,850 lbs/yr.

Process / Operational Limits

1.3 All waste materials shall be captured and stored in closed containers and shall be disposed of in an acceptable manner in compliance with all applicable rules and regulations. [R336.1224, R336.1225, R336.1702(a)]

COMPLIANCE—I observed closed containers in the premix area.

1.4 The disposal of spent exhaust filters shall be performed in a manner which minimizes the introduction of air contaminants to the outer air. [R336.1224, R336.1370]

Compliance- Exhaust filters are disposed three times every day. Mr. McKenzie explained that the filters are disposed in the garbage.

Equipment

1.5 The permittee shall not apply mold release agent unless all respective exhaust filters are installed, maintained and operated in a satisfactory manner. [R336.1224, R336.1225, R336.1301, R336.1331, R336.1901, R336.1910]

COMPLIANCE- The exhaust appeared to be working in a satisfactory manner.

1.6 The permittee shall continue to evaluate higher solids mold release agents and their use with HVLP applicators according to the following schedule:

a) The permittee shall evaluate the effectiveness of the available applicator options and report to the AQD District Supervisor not later than December 31, 2005.

COMPLIANCE- Company evaluated effectiveness of the application options and reported to the DEQ their findings on January 27, 2006.

b) Based on the results of the evaluation, the permittee shall install the applicator technology that provides the best transfer efficiency for the mold release agent being applied on all existing lines by June 30, 2006, and on all new lines as they are installed.

COMPLIANCE- HVLP guns were chosen and installed on existing lines.

c) If HVLP applicators have not been installed on all six lines by June 30, 2006, the permittee shall submit a Permit to Install application providing a new VOC best available control technology analysis for the mold release agent applicators.

COMPLIANCE- HVLP were installed on four lines.

c) Thereafter, for any HVLP applicators installed, the permittee shall keep test caps available for pressure testing. [R336.1702(a)]

COMPLIANCE- Test caps are onsite, but previous inspections revealed that visual observations are a better way to determine that the HVLP are working properly. Observation of finished molds would indicate a problem with the HVLP guns.

Recordkeeping /Reporting /Notification

1.7 All required calculations shall be completed in a format acceptable to the AQD District Supervisor and made available by the 15th day of the calendar month, for the previous calendar month, unless otherwise specified in any recordkeeping, reporting or notification special condition. [R336.1205, R336.1224, R336.1225, R336.1702, R336.1901]

COMPLIANCE- Records were kept. Records were provided for the last four years.

1.8 The permittee shall maintain a current listing from the manufacturer of the chemical composition of each material, including the weight percent of each component. The data may consist of Material Safety Data Sheets, manufacturer's formulation data, or both as deemed acceptable by the AQD District Supervisor. All

records shall be kept on file for a period of at least five years and made available to the Department upon request. [R336.1224, R336.1225, R336.1702, R336.1901]

COMPLIANCE- MSDS were kept.

1.9 The permittee shall keep the following information on a calendar month basis for EURRPE:

- a) Pounds of each material used and pounds of foam produced on a calendar month basis.

COMPLIANCE- Records were kept on a monthly basis.

- b) Pounds of foam produced and pounds of flush solvent, minus water and mold release agent usage on a 12-month rolling time period basis.

COMPLIANCE- Records were kept on 12 month rolling time period.

- c) Where applicable, pounds of flush solvent reclaimed. The amount of any flush solvent that is collected and shipped off-site for reclaim or recycle in a manner that does not result in emissions from the facility may be subtracted from the total flush solvent used.

NA - They do not calculate flush solvent reclaimed.

- d) VOCs and Exempt Solvents Combined mass emission calculations determining the monthly emission rate in tons per calendar month using the emission factors and calculation methods provided in Appendix A. If any raw materials are substituted, consistent with the provisions of Rule 285 (b) and (c), for those described in the permit application, an updated emission factor shall be calculated using the methodology in the permit application.

COMPLIANCE- Calculations are done on a monthly basis.

- e) VOCs and Exempt Solvents Combined mass emission calculations determining the annual emission rate in tons per 12-month rolling time period as determined at the end of each calendar month using the emission factors and calculation methods provided in Appendix A.

COMPLIANCE- Calculations are done.

The records shall be kept in the format specified in Appendix A or an alternate format that has been approved by the AQD District Supervisor. All records shall be kept on file for a period of at least five years and made available to the Department upon request. [R336.1205, R336.1702]

COMPLIANCE- Records are kept in a format approved by DEQ.

Stack / Vent Restrictions

	Stack & Vent ID	Maximum Diameter (feet)	Minimum Height Above Ground Level (feet)	Applicable Requirement
1.10a	SVRRPE1	2.09	29.6	R336.1225, R336.1901, 40 CFR 52.21(c) & (d)
1.10b	SVRRPE2	1.67	38	R336.1225, R336.1901, 40 CFR 52.21(c) & (d)

1.10c	SVRRPE3	1.72	37.25	R336.1225, R336.1901, 40 CFR 52.21(c) & (d)
1.10d	SVRRPE4	1.72	39	R336.1225, R336.1901, 40 CFR 52.21(c) & (d)
The exhaust gases shall be discharged unobstructed vertically upwards to the ambient air with the exception of stack SVRRPE1 which has a horizontal discharge.				

COMPLIANCE- The stack height was not measured, but visual observations of the stack during the inspection indicate that it appears to be in compliance.

The following conditions apply to: EUPREMIX

2.1 The permittee shall not operate EUPREMIX unless the fabric filter collector is installed, maintained and operated in a satisfactory manner. [R336.1224, R336.1225, R336.1331, 40 CFR 52.21(c) and (d)]

COMPLIANCE- The fabric filter was installed and appeared to be maintained. It was not operating at the time of my inspection. The equipment is maintained monthly and filters are changed when the pressure drop reaches the range recommended by the manufacturer.

The following conditions apply to: FGFACILITY**Emission Limits**

	Pollutant	Equipment	Limit	Time Period	Compliance Determination
3.1a	Each Individual HAP	FGFACILITY	Less than 9.0 tpy	12-month rolling time period as determined at the end of each calendar month.	Compliance- Total emissions of HAPs are less than 1 TPY.
3.1b	Aggregate HAPs	FGFACILITY	Less than 22.5 tpy	12-month rolling time period as determined at the end of each calendar month.	Compliance- Total emissions of HAPs are less than 1 TPY.

Testing

3.2 The HAP content of any material as received and as applied, shall be determined using manufacturer's formulation data. Upon request of the AQD District Supervisor, the manufacturer's HAP formulation data shall be verified using EPA Test Method 311. [R336.1205(3)]

UNDETERMINED- Emissions were based on MSDS. Emission of HAPs were significantly below emission limits so at this time, a request to verify HAP content was unnecessary.

Recordkeeping / Reporting / Notification

3.3 All required calculations shall be completed in a format acceptable to the AQD District Supervisor and made available by the 15th day of the calendar month, for the previous calendar month, unless otherwise specified in any recordkeeping, reporting or notification special condition. [R336.1205(3)]

3.4 The permittee shall keep the following information on a calendar month basis for FGFACILITY:

- a) Gallons or pounds of each HAP containing material used.
- b) Where applicable, gallons or pounds of each HAP containing material reclaimed.
- c) HAP content, in pounds per gallon or pounds per pound, of each HAP containing material used.
- d) Individual and aggregate HAP emission calculations determining the monthly emission rate of each in tons per calendar month.
- e) Individual and aggregate HAP emission calculations determining the annual emission rate of each in tons per 12-month rolling time period as determined at the end of each calendar month.

The records shall be kept in a format acceptable to the AQD District Supervisor. All records shall be kept on file for a period of at least five years and made available to the Department upon request. [R336.1205(3)]

COMPLIANCE- Records are kept. Records were placed in the facility file.

APPENDIX A

Permit to Install 49-05
 Recycled Polymeric Materials, Inc.
 Monthly VOCs and Exempt Solvents Combined Emission Calculation

	A	B	C	D = (A X C)/2000 or D = (B X C)/2000
Material	VOCs and Exempt Solvents Combined Emission Factor (lb/lb product)	VOCs and Exempt Solvents Combined Emission Factor (lb/lb material used)	Monthly Foam Prod. Or Material Usage (lbs/mo)	Monthly VOCs and Exempt Solvents Combined Emission Rate (tons/mo)
Foam	6.5E-03			
NMP		1		
Release Coating 7128A		0.85		
E636 Mold Release		0.99		
Total Monthly VOCs and Exempt Solvents Combined Emissions (tons/mo) E = Sum of Col. D				E
12-mo Rolling VOCs and Exempt Solvents Combined Emissions (tons/year) F = E + Total of 11 Previous Months				F

APPLICABLE FUGITIVE DUST CONTROL PLAN CONDITIONS:
 N/A

MAERS REPORT REVIEW:

Pollutant	2014 Emissions(TPY)
VOC	14.4

FINAL COMPLIANCE DETERMINATION:

It appears the facility is operating in compliance with applicable regulations.

NAME *J. White*

DATE *8-10-15*

SUPERVISOR *W.M.*