

B3315
MANUA

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

B331563618

FACILITY: PLASTOMER CORP		SRN / ID: B3315
LOCATION: 37819 SCHOOLCRAFT RD, LIVONIA		DISTRICT: Detroit
CITY: LIVONIA		COUNTY: WAYNE
CONTACT: Bill Gollnitz , Technical Director		ACTIVITY DATE: 07/13/2022
STAFF: Jill Zimmerman	COMPLIANCE STATUS: Compliance	SOURCE CLASS: SM OPT OUT
SUBJECT: Target Inspection		
RESOLVED COMPLAINTS:		

DATE OF INSPECTION : 07/13/2022

TIME OF INSPECTION : 10:20 am

INSPECTED BY : Jill Zimmerman

PERSONNEL PRESENT : William Gollnitz,
Technical Director

Projects Manager

Simone Merrick, Technical

FACILITY PHONE NUMBER : 734-464-0700

FACILITY FAX NUMBER : 734-464-4792

FACILITY BACKGROUND

Plastomer Corporation manufactures foam gaskets and seals primarily for the automotive industry. The facility's main process consists of a slabstock foam machine that blends Toluene Diisocyanate (TDI), resins, and catalysts. The final foam product is a continuous "loaf" roughly four feet wide by three feet high. Plastomer is a synthetic minor source, operating within a 175,000 square foot building.

The facility normally operates one shifts per day, five days per week, with additional work as needed. Foam production is a batch process that normally operates about one day per week. The foam production machine can produce up to 24,000 pounds of foam per hour.

COMPLAINT/COMPLIANCE HISTORY

No complaints have been received regarding this facility since the time of the last inspection on May 3, 2018.

OUTSTANDING VN's

No Violation Notices (VN) have been issued regarding this facility.

PROCESS DESCRIPTION AND EQUIPMENT

Foam Production:

Plastomer currently makes 31 variations of foam, according to manufacturer specifications. For foam production, approximately 18 different ingredients are pumped from various storage tanks and combined at a common mix head. The flows are metered, and computer controlled. The main ingredients are 30% TDI, 60% long-chained alcohol resins (polyols), and 10% surfactants, catalysts, and water. These ingredients are combined at a common mix point that discharges onto a four-foot-wide paper “trough” run on a conveyor, where the polyurethane foam reaction is initiated. The reaction between TDI and water forms carbon dioxide that expands the liquid mix into a foam loaf as it cures. The foam loaf reaches full size in less than two minutes, and then continues curing as it runs through the machine, reaching an internal temperature of 320 F due to the exothermic reaction. The amine catalysts facilitate curing. The foam loaves reach a length of approximately 36 feet. At that point, they are cut with a band saw to smaller loaves (about 6 feet long). They are then picked up off the conveyor by overhead cranes, stacked, and left to cool for 24 hours.

Lamination Line:

After cooling, the foam loaf is run through a slitter, which cuts the foam into sheets ranging in thickness from 0.195 inches to 6 inches. At the front of the laminator conveyor, water-based “superglue” is applied to the foam sheet with a roller, and a Mylar backing is then attached. At the back end of the conveyor, another roller adds water-based adhesive “M2980” to paper. The paper is then sent through a 50-foot oven, set at 225 F, to facilitate curing by driving off water. The paper is then attached to the foam on the conveyor line, and both are rolled up and sent to the mold lines.

The final rolls are then die-cut to customer specifications using any of the nine mold lines. These mold lines have certificated of operation but are exempt from permitting. Final product is held no more than two to three days.

INSPECTION NARRATIVE

I arrived at the facility at 10:20 am on July 13, 2022 meeting with Ms. Simone Merrick and Mr. William Gollnitz. Ms. Merrick stated that no changes had been made to the process or the building since the last inspection. Ms. Merrick brought the logbooks for my review. The facility maintains two logbooks, one tracking the foam production, and one tracking the adhesive usage. The foam log is entered daily, with 12 month rolling averages calculated at the end of the month. The binders were up to date with all reporting requirements. The facility uses only water-based adhesives.

After our initial pre-inspection meeting, we then walked through the facility to see the process. Completed loaves of foam were also being stored at the facility. Foam sheets were being put through the lamination line, where the adhesive and backing are applied. Also, foam sheets were being put through the die-cast line, where they were stamped based on a customer's needs.

EQUIPMENT AND PROCESS CONTROLS

Large foam machine

Laminator mold machines

(1) 10,000 gallon TDI storage tank

(1) 10,000 gallon polyol tank

(2) 5,000 gallon polyol tank

(1) 12,000 gallon polyol tank

Various chemical containers (55 gallons or less)

Multiple die cutting machines, which are used to cut foam into desired shapes

There are no process controls. TDI is a hazardous air pollutant (HAP). Since TDI is highly reactive with water, very little escapes the process as an air emission via the head mixer or during curing. Approximately 50 grams of TDI are emitted for each ton of TDI reacted. Carbon dioxide and heat are the primary by-products formed by the foam production process. The drying oven emits > 95% water and < 5% solvents.

APPLICABLE RULES/PERMIT CONDITIONS

The 12,000 gallon polyol tank is not subject to NSPS Subpart Kb, since 12,000 gallons is less than 75m³ (19,812 gallons).

Plastomer operates under two permits, #371-97 (slabstock foam machine) and #171-99 (laminator)

Permit #371-97, Special Conditions:

13. COMPLIANCE – All notifications and record submittals are sent to EGLE-AQD, as required since the assumption of the Wayne County Department of Environment.

14. COMPLIANCE – The VOC emission rate from the slabstock foam process does not exceed 11.4 pounds per hour or 12.0 tons per year. 69.3 pounds emitted during the 2021 when the line operated for 105 hours. Therefore, 0.66 pounds VOC were emitted per hour.

15. COMPLIANCE – The TDI emission rate does not exceed 0.007 pounds per hour based on the records reviewed during the onsite inspection. Emissions reported in MAERS for 2021 were 0.735 pounds of TDI.

16. COMPLIANCE – The two foam lines are not operated simultaneously. During the onsite inspection, the foam line was not operating.

17. COMPLIANCE – Slabstock foam machine is not run more than 8 hours per day, 2080 days per 12-month rolling period, as demonstrated by the records reviewed during the onsite visit. During 2021, the line operated for 105 hours.

18. COMPLIANCE – Stack testing was completed in 1999. No additional testing is required at this time.

19. COMPLIANCE – Stack testing was completed and approved in 1999. No additional testing is required at this time.

20. COMPLIANCE – Records are maintained in a daily logbook which detail:

A. Pounds of foam per day.

B. Hours of operation per day.

C. Annual hours of operation per month based on 12-month rolling period.

D. Annual VOCs emitted based on 12-month rolling period.

E. Pounds of TDI emitted per day.

These required were reviewed during the onsite inspection and were reported up to date.

21. COMPLIANCE – Stack dimensions are within permitted limits. The stack has not been modified.

Permit #171-99, Special Conditions:

- 1. COMPLIANCE – All notifications and record submittals are sent to MDEQ-AQD since the assumption of Wayne County Department of Environment.**
- 2. COMPLIANCE – VOC emissions do not exceed 431.9 pounds per calendar day, nor 30.0 tons per year based upon 12-month rolling average. The emissions reported in MAERS for 2021 were 4.24 tons for the year.**
- 3. COMPLIANCE – The VOC content of the coating solids is 0.0278 pounds VOC per pound coating, which is less than the permitted limit of 0.10 pounds VOC per pound coating solids.**
- 4. COMPLIANCE – The HAPs emission permitted limit is 9.0 tons per year for any individual HAP and 22.5 tons per year for any combination of HAPs at this source. The facility reported emitting less than 1 pounds of TDI in 2021.**
- 5. COMPLIANCE – All waste coatings and solvents were collected and maintained in closed containers.**
- 6. COMPLIANCE – The VOC content was determined by the manufacturer's formulation data.**
- 7. COMPLIANCE – Daily and monthly records including hours of operation, VOCs emitted, number of coatings used etc. are maintained at the facility in a log book and were reviewed**

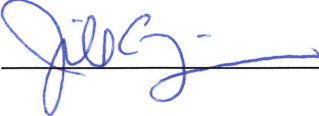
during the onsite inspection.

MAERS REPORT REVIEW

The facility submitted MAERS on February 23, 2022. This report was reviewed on February 25, 2022. The reported emissions were reviewed and appear to have been reported accurately. Supporting data was included to show how the emissions were calculated.

FINAL COMPLIANCE DETERMINATION

Plastomer appears to be operating in full compliance with the applicable permit conditions. No compliance problems were noted during this inspection.

NAME 

DATE 7/14/2022

SUPERVISOR JK