

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

P055362556

FACILITY: WINDSOR MACHINE & STAMPING US LTD		SRN / ID: P0553
LOCATION: 26655 NORTHLINE ROAD, TAYLOR		DISTRICT: Detroit
CITY: TAYLOR		COUNTY: WAYNE
CONTACT: TJ Forgette		ACTIVITY DATE: 03/30/2022
STAFF: Katherine Koster	COMPLIANCE STATUS: Compliance	SOURCE CLASS: SM OPT OUT
SUBJECT: FY2022 Self initiated inspection		
RESOLVED COMPLAINTS:		

REASON FOR INSPECTION: Targeted Inspection

INSPECTED BY: Katie Koster, AQD

PERSONNEL PRESENT: TJ Forgette, EH&S manager

FACILITY PHONE NUMBER: (734) 941-7320

FACILITY FAX NUMBER: (734) 941-6208

FACILITY WEBSITE: windsormachine.com

FACILITY BACKGROUND

Windsor Machine and Stamping Ltd. (Windsor), an automotive component manufacturer, is located in an 80,000 square foot (ft²) facility at 26655 Northline Road, Taylor, Michigan. The facility is bordered by industrial and commercial property to the west and east. Residential property is located to the north and south. The nearest residential property is located approximately 400 feet to the northwest. Ford and Chrysler are the main customers. Chris Austin is the Plant Manager and Frank Mazza is the corporate Environmental Manager.

The facility typically operates 5 am to 2 am which is two 10-hour shifts. However, if the work gets done in four days, then everyone has the fifth day off. There are about 115-120 employees.

Windsor was issued permit to install (PTI) 151-14 on November 7, 2014, for the operation of a reaction injection molding (RIM) line. PTI 151-14 is a Title V Opt-Out permit by limiting volatile organic compound (VOC) emissions to less than 100 tons. The facility is also considered a synthetic minor for hazardous air pollutants (HAPs) because PTI 151-14 limits HAP emissions to less than 10 tons per year on an individual HAP basis and less than 25 tons per year on an aggregate HAP basis. Windsor was issued permit to install 151-14A on July 27, 2015, to add a second RIM line to their operations. Facility is still operating as an opt-out for VOC's and synthetic minor for HAPs. In July 2021, according to Mr. Forgette, due to issues with staffing the second RIM line, Windsor removed the line and shipped it to Mexico. All finished product is sent back to the Taylor facility from Mexico for final inspection.

PROCESS OVERVIEW

The facility operated two RIM lines used for making foam head rests for automotive applications from 2015 to mid-2021. As stated above, the second line was removed in mid-2021. Note, the following is restated from the prior inspection report. The RIM line consists of a series of 24 carriers with 41 tools with up to 2 molds per carrier, arranged on a circular carousel. There are four stations on the carousel. At the first station, a mold release agent is manually applied. Note, paste wax used to be applied manually but has not been in use for several years. Particulate emissions are controlled by filters. At the second station, a mold release agent is sprayed into the mold using a robotic arm in a partially enclosed booth. At the third station, foam components (polyol and methylene diisocyanate [MDI]) are mixed under high pressure in a mix head and then injected into the mold using a robot. The mold is then closed automatically, and the reacted foam material expands in the mold forming the head rest. The mold line is electrically heated to 125 to 130 degrees Fahrenheit (°F). At the fourth station, the mold is opened, and the part is removed. The whole process takes about three minutes to complete.

The facility also operates machining and welding equipment for the manufacture of metal head rest parts. The facility operates multiple steel drawing lines, robotic welding stations, bending and forming stations, and headrest assembly areas. These additional manufacturing areas are exempt from PTI requirements.

COMPLAINT/COMPLIANCE HISTORY

There have been no complaints for this facility.

The prior inspection occurred in 2020. At that time, the facility did not provide all of the required records in a timely manner.

OUTSTANDING CONSENT ORDERS

None

OUTSTANDING VIOLATION NOTICES

None

INSPECTION NARRATIVE

On March 30, 2021, the Michigan Department of Environment, Great Lakes, and Energy (EGLE), Air Quality Division (AQD) inspector, Ms. Katie Koster conducted an inspection of Windsor Machine at 26655 Northline Road, Taylor, Michigan. I met with Mr. TJ Forgette, EHS manager. The inspection was conducted to determine the facility's compliance with the Natural Resources and Environmental Protection Act (NREPA), Act 451, Part 55, and PTI 151-14A.

I stated the purpose and authority for the inspection. The inspection began with observation of the single RIM line which was in operation. As already stated, the second line has been removed. Mr. Forgette reaffirmed that paste wax was not in use. I viewed the filters and they appeared to be properly in place and are reportedly changed out weekly. Filters are not hazardous waste and so they are thrown in the trash according to Mr. Forgette. MDI and Polyol are received in totes and piped to a mixing head for injection into the mold. Monthly usage is determined through purchase records. Employees sand each headrest as some of the foam seeps out of

the mold. Spray guns are used until they break. It was noted that the company has now placed filters over the opening in the roof where the ductwork from the other RIM line used to exit the building.

I observed the other equipment which all appeared exempt: robotic welding, steel drawing machines, robotic bending and forming stations, and assembly areas. Emissions from the drawing machines, assembly areas, and bending and forming stations are released to the general in-plant environment. Each robotic welding station is vented to outside ambient air through its own individual stack at roof level. The robotic welding is completed in a semi closed booth.

We stepped outside to look at the exhaust stack for the RIM line. I confirmed that the exhaust was unobstructed vertically upward. I inquired about any boilers or generators on site. I was told there were neither; nor did I observe any.

We wrapped up the inspection in his office. I reviewed the permit conditions and associated recordkeeping with the company and verbally stated the records I would like to obtain. I followed up with the attached email. I explained to Mr. Forgette that if the facility plans to reinstall the second RIM line, then a permit to install is required.

APPLICABLE RULES/PERMIT CONDITIONS

PTI 151-14A

PTI 151-14A was issued on July 27, 2015.

FG-HRLINES

VOCs are limited to 73.7 tpy on a 12 month rolling basis. **IN COMPLIANCE.** For 2021 and 2022 YTD, the highest 12 month rolling VOC emissions were 26 tons in May 2021. See attached.

VOC content of spray mold release is limited to 6.3 lb./gal. VOC content of paste wax mold is limited to 5.0 lb./gal. According to the facility, facility no longer uses paste wax mold. **IN COMPLIANCE.** This is based on the SDS. Results of Method 24 testing are pending.

Capture all waste material and store them in closed containers. **IN COMPLIANCE.** I did not observe any waste material that was not in a closed container during the inspection.

Dispose of spent filters in a manner which minimizes emissions. **DID NOT EVALUATE.** Did not observe during inspection. According to facility, filters are thrown in the trash.

Shall handle all VOC or HAP containing material in a manner to minimize generation of fugitive emissions. **IN COMPLIANCE.** Materials are stored in enclosed containers as observed during the inspection.

Shall not operate FG-HRLINES unless all exhaust filters are installed maintained and operated in a satisfactory manner. **IN COMPLIANCE.** Exhaust filters were in place during the inspection. See attached records for filter changes.

Shall equip and maintain FG-HRLINES with electrostatic spray guns, HVLP applicators, or comparable. IN COMPLIANCE. See attached documentation submitted by the facility.

Shall determine VOC content of coatings using Method 24 or may use manufacturer's formulation data upon approval of supervisor. IN COMPLIANCE. Facility collected a sample of the mold release and submitted to TRI labs for Method 24 analysis. See attached. Results were 6.08 lb VOC/gal. No water was detected. Note, facility is using 6.2 lb VOC/gal based on SDS so the calculations a slightly on the conservative side. This is acceptable to AQD.

Shall maintain SDS of materials in use. IN COMPLIANCE. SDS are maintained and available.

Shall keep the following on a monthly basis:

- a. Gallons used per month. See attached.
- b. VOC content of each mold release as applied. Note, facility claims as received is as applied. Only one mold release is in use at this time. See attached.
- c. VOC emissions in tons on a monthly basis. See attached.
- d. VOC emissions in tons on a 12-month rolling basis. See attached.

IN COMPLIANCE. 12 month rolling calculations are in order for the last several years. See attached.

The exhaust gases from the stacks listed in the table below shall be discharged unobstructed vertically upwards to the ambient air unless otherwise noted. IN COMPLIANCE. Both lines vented to a common stack. I walked outside with Mr. Forgette to observe the stack. Exhaust is discharged unobstructed vertically upward. I did not observe any emissions. However, I did not evaluate stack height at this time.

FGFACILITY

Emissions are limited to each HAP less than 9 tpy, and aggregate HAP less than 25 tpy

Determine HAP content using manufacturer formulation.

Shall keep the following records:

Gallons or pounds of HAP containing material

HAP content of each material

Individual and aggregate HAP calcs on a monthly basis

Individual and aggregate HAP calcs on a 12-month rolling basis

IN COMPLIANCE. HAP emissions are minimal. Gallons of material usage are tracked per month for the mold release and isocyanate (which contains MDI). Based on the 2015 inspection, facility determined the HAP content of PU-11402 as it is not

specifically listed in the SDS. Based on attached documentation, PU-11402 mold release contains at most 1% toluene, 0.1% ethylbenzene, 0.1% naphthalene, 0.1% benzene. For 2021, 0.38 tpy was the highest 12 month rolling value for total HAPs. This also demonstrates compliance with a single HAP.

While the foam components for isocyanate include MDI which is a HAP, the chemical reaction that takes place inside of the closed mold results in minimal emissions. As such, no emissions are estimated. See attached from permit application.

Update: The company did perform a calculation of HAPs from the foam process. See attached spreadsheet. Total emissions for 2021 were 0.176 pounds for MDI emissions and N-N dimethyl ethanol amine were 21.05 pounds.

Exempt Equipment

The facility also operates machining and welding equipment for the manufacture of metal head rest parts. The facility operates five steel drawing lines, thirteen robotic welding stations, bending and forming stations, and five headrest assembly areas. These additional manufacturing areas are exempt from PTI requirements per 336.1285(2)(l)(i), 1285(2)(i),

APPLICABLE FUGITIVE DUST CONTROL PLAN CONDITIONS

N/A. All lots are paved.


MAERS REPORT REVIEW

2021 MAERS was submitted timely and reviewed as part of this inspection.

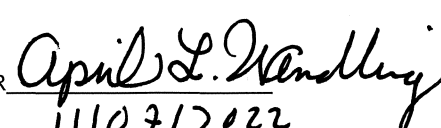
FINAL COMPLIANCE DETERMINATION

At this time, facility appears to be in compliance with applicable regulations evaluated in this report.

Note: AQD received an inquiry regarding the historical TRI reports as company was reporting high amounts of MDI emissions. Inquiries to the facility and further research indicates that there was an error in the emissions calculations. See attached emails.

NAME 

DATE 10/28/22

SUPERVISOR 
11/07/2022