

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

N390070301

<b>FACILITY:</b> Essentra Porous Technologies		<b>SRN / ID:</b> N3900
<b>LOCATION:</b> 5301 S Graham Rd, SAINT CHARLES		<b>DISTRICT:</b> Bay City
<b>CITY:</b> SAINT CHARLES		<b>COUNTY:</b> SAGINAW
<b>CONTACT:</b> Kelly Deering , EH&S Manager		<b>ACTIVITY DATE:</b> 12/12/2023
<b>STAFF:</b> Gina McCann	<b>COMPLIANCE STATUS:</b> Non Compliance	<b>SOURCE CLASS:</b> MINOR
<b>SUBJECT:</b> Inspection of 470-93F		
<b>RESOLVED COMPLAINTS:</b>		

Porex Technologies Corporation produces polyurethane foams. This inspection was initiated by Porex's modification PTI application 470-93F to increase the number of prepolymer batches made by the reactors per day from 8 to 12. PTI 470-93F covers 2 pre-polymer reactors, 5 slab stock foam production lines, and five electric microwave drying ovens. File review showed that AQD staff was last on-site in 2021. This site was in compliance with it's permit. However, a cold cleaner was discovered in the TDI room and is not in compliance with R 336.1707. A violation was issued for this equipment.

I met with Kelly Deering, EH&S Manager. Kelly provided a detailed tour of the facility and records for FGREACTORS.

The facility employees approximately 70 people. The plant operates in 12-hour shifts. The facility produces various polyurethane foams for use in the medical and cosmetic industry. Polyethylene Glycol (PEG) and Toluene Diisocyanate (TDI) are reacted to form a polyurethane prepolymer. Prepolymer is mixed daily and stored in totes for specific jobs. The portable totes are sent to a production line where the prepolymer is pumped to a mix/application head which contains an aqueous solution specific to the type of polyurethane being produced. Foam is laid out to a specific thickness in between two carrier films and allowed to react/cure in an exothermic reaction as it travels along a conveyor through the electric drying ovens. The prepolymer metering and mixing is specific to the product being made, therefore it is very controlled. The film travels through a covered or uncovered (depending on the line) conveyor for roughly 100 feet where it is rolled onto tubes for further processing into specific products. Typical products resulting from the polyurethane foam production include N95 masks, pillow pads for hospital beds, wound care absorbents, medical/cosmetic foams with specific physical properties.

TDI emissions from the facility are controlled by a water scrubber. The scrubber controls exhaust from all mixing lines and production lines. The scrubber is located in an enclosed room where the TDI tank is also located. The ambient TDI emissions are monitored for the room and are shown on a local readout by the entrance door. During the inspection the process was not in operation. I was able to view the local readouts in this room and the scrubber. The scrubber recently had maintenance performed. A complete clean out and fan replacement was performed in 2021.

The permit restricts the number of prepolymer batches to 12 per 24 hour calendar day. Special condition VI.1. is the associated monitoring and recordkeeping requirement that requires the plant to record the volume of each batch produced and the quantity of batches produced each 24 hour calendar day period. I reviewed 2023 batches produced per 24 hour period and gallons per batch. Generally, the facility uses 250-290 gallons per batch. The number of batches varies from day to day from 0-8.

FGFOAMLINES consists of 5 slab stock lines and 5 drying ovens. The only requirement in this flexible group is for the GACT OOOOOO, which restricts the use of methylene chloride for any purpose in the slabstock polyurethane foam production process. During the inspection I did review SDSs for the plant and did not see methylene chloride in any of them.

Lastly, in the TDI room, there was parts cleaner. The unit heats N Methyl Pyrrolidone to approximately 200F. The cleaner is used to clean the nozzles/application heads from the lines. According to Rule 103(aa), a cold cleaner means a tank containing organic solvent with a volatile organic compound content of 5 % or more, by weight, and at a temperature below its boiling point that is used to spray, brush, flush, or immerse metallic and/or plastic objects for the purpose of cleaning or degreasing. The boiling point of N Methyl Pyrrolidone is 204C or 392F. R 336.1281(2)(h)

exempts cold cleaners that have an air/vapor interface of not more than 10 square feet from obtaining a permit. The air/vapor ratio is 1.9 square feet and it appears to meet permit exemption R281(2)(h). However, the cold cleaner does not meet R 336.1707(2) and (3).



**Image 1(Cold Cleaner)** : Measurement of surface area.



**Image 2(Cold Cleaner 2)** : Picture of cleaner.



**Image 3(Cold Cleaner 3) :** Picture of surface area.

NAME *Mina J. [Signature]*

DATE 1/29/2024

SUPERVISOR *Chris Hare*