

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

N646066396

FACILITY: Toyoda Gosei Brighton		SRN / ID: N6460
LOCATION: 100 BRIGHTON INTERIOR DR, BRIGHTON		DISTRICT: Lansing
CITY: BRIGHTON		COUNTY: LIVINGSTON
CONTACT: Brian Gillette , Sr. EHS Coordinator		ACTIVITY DATE: 02/21/2023
STAFF: David Rauch	COMPLIANCE STATUS: Compliance	SOURCE CLASS: MINOR
SUBJECT: An unannounced routine inspection of the facility was conducted. The facility is no longer Ontegra and is now TG Fluid Systems. This inspection was to check on the PTI No 111-98 for paint booth systems.		
RESOLVED COMPLAINTS:		

On February 21, 2023 the State of Michigan’s (SOM), Environment, Great Lakes, and Energy (EGLE), Air Quality Division (AQD), conducted an unannounced routine inspection of the TG Fluid Systems facility. The inspection was conducted due to an active permit for the site Permit No 111-98. The facility is located at 100 Brighton Interior Dr, Brighton, Livingston County.

Environmental contact

Brian Gillette, SR.EHS Coordinator, Brian.Gillette@toyodagosei.com, 517-219-2175

Facility Description

This facility manufactures fluid system tubing for car engines. The facility extrudes plastics and molds them into the tubing that is used in the vehicles. The facility also makes the molds through a CNC process where they cut casts to the proper design to work in the mold machines.

Location

This facility is located South of I-96 and West on Nemco Way or Challis Rd which both connect to Brighton Interior Rd. The facility is located near a public and industrial area. East of the facility are businesses, outlets, and a movie theater, to North and South are two ponds and directly West is an open field and a residential property.

Facility History

This facility was originally Ontegra in 2008 which had a permit to install (PTI) No 111-98 for a paint booth system. The facility changed hands in 2017 and became Toyoda Gosei Fluid Systems which only does plastic extrusion and molding. The permit will be voided due to the facility having all exempt equipment.

Fee Status

This facility does not report air emissions to MAERS because they do not meet the Category F criteria for a minor source. The facility extrudes plastics and emits internally for most of the production process. All emissions from this facility are below the MAERS reportable levels for VOC and PM.

Regulatory Overview

This facility is classified as a minor source due to the lack of Potential to Emit (PTE) criteria pollutants such as (carbon monoxide, nitrogen oxide, sulfur dioxide, volatile organic compounds, lead, particulate matter 10 and particulate matter 2.5 nor of Hazardous Air Pollutants ({HAPs}). Facilities that have higher PTE are considered major sources and renewable operating permits are required for those sources.

This facility contains exempt equipment with lower emission units for plastic extrusion, and parts washers. Previous facilities in this location had permitted equipment but all permits for this site have since been voided due to equipment being removed or determined to be exempt from permits to install.

Emission Units

Equipment	Serial/Machine #	Exemption	Vented	Chemicals	Controls	Compliance
Corma Line	4743	286(2)(a-c)	Internal	Resin	Torit	Yes
GM1 Line	G14070	286(2)(a-c)	Internal	Resin	Torit	Yes
GM2 Line	G14155	286(2)(a-c)	Internal	Resin	Torit	Yes
GM3 Line	10794	286(2)(a-c)	Internal	Resin	Torit	Yes
Jelly Line	10771	286(2)(a-c)	Internal	Resin	Torit	Yes
Davis Line	10792	286(2)(a-c)	Internal	Resin	Torit	Yes
R&B #2	10800	286(2)(a-c)	Internal	Resin	Torit	Yes
ND Line	36069	286(2)(a-c)	Internal	Resin	Torit	Yes
Beast Line	37906	286(2)(a-c)	Internal	Resin	Torit	
CNC Machine		285(l)(vi)(B)	Internal	Aqueous Solution	Closed Unit	Yes
2 Parts washers	2016/2470	281(2)(h)	Internal	Mirachem	Closed Unit	Yes

Resin Blaster		285(r)(iv)	Internal	Heat/Resin	Closed Unit	Yes
Molds Torch Cleaning		285(r)(iv)	Internal	None		Yes

Facility Records

This facility is proposing to put in a new Fluidized Temperature Bath Parts Cleaning Line. This cleaning line would be utilized for cleaning residual polyamide resin materials from extrusion line tooling parts per Weston Solutions, the facility consultant. The unit will be an Accurate Thermal Systems Fluidized Temperature Bath Model FTBLL47. The process will be a non-abrasive cleaning process, using aluminum oxide to enhance heat transfer and pyrolytically break down the resin. Controls for the unit will be particulate filter and activated carbon filter for air emissions. Carbon filters assume 90% of VOC control. This unit would also be electric based on Brian Gillette's assumption of the facility using electric ovens. The unit may also never be installed due to cost inefficiency.

The facility is proposing to use Rule 291 for “de minimis” emissions. The Weston Solutions consultant provided potential emissions to support use of Rule 291 Exemption. They also provided a description of the process as follows:

*Parts are placed into fluidized bath to remove polyamide residue primarily through pyrolysis. The process exhausts through a cyclone to recover sand from fluidized bed, followed by HEPA/carbon filtration system.

- Parts Loaded 150lbs/batch
- Residue 10% of loaded parts
- 15lbs/batch
- Assumption: 50% plastic pyrolyzed to carbon
- 50% volatilized as VOC

Potential to Emit (PTE)

VOC Emissions

7.5lbs/hour VOC emitted (uncontrolled)

90% control from carbon
 0.75lbs/hour VOC emitted (controlled)
 8760 Hours/year
 3.29 tons/year VOC (PTE)

HAP Emissions

Emission factors for polyamide injection molding

0.34 lbs VOC/ton plastic
 0.0058 lbs HAPs/ton plastic
 1.71% of VOC as HAPs

Assumption: 2% HAP emissions of VOC emissions
 0.07 tons/year HAPs(PTE)

Particulate Emissions (PM/Pm10/Pm2.5)

Exhaust Rate 1000 CFM
 0.02 grains/scfm
 1200 grains/hour
 7000 grains/lb
 0.17 lbs/hour
 8760 hours/year
 0.75 tons/year PM/PM10/PM2.5

Table 1b

Contaminant	“De Minimums” (Limit ton/year)	FBCS (PTE) ton/year
VOC	5	3.29
PM	10	0.75

PM10	5	0.75
PM2.5	3	0.75

FBCS- Fluidized Bed Cleaning System

The following toxics have been identified from polyamide processing:

Contaminant	Screening Level
Hydrogen Cyanide	0.8
Caprolactam	10
Maleic Anhydride	0.1
Styrene	2

Rule 291 (2)(a) defines the de minimus emission limit for total toxics with screening levels greater than 0.04 micrograms per cubic meter at 0.12 tons/year.

Total HAP PTE is estimated at: 0.07 tons/years. Below de minimus rate of 0.12 tons/year.

Potential emissions from all contaminants meet the de minimus criteria of rule 291 for exemption from PTI requirements. *

**All information between the (*) is information provided from Weston Solutions showing the facility will meet potentials for Rule 291. **

Inspection

Arrived at the facility at 10:36am where I entered a waiting room until I was met by Brian Gillette Environmental Health and Safety Coordinator (EHSC) and Mark Rhine the Facility Engineer. When I arrived, the facility was going through an audit and the EHSC was unable to go with me through the inspection, so I was accompanied by Mark Rhine. Mark was able to answer all the questions I had about the facility and any questions that were unable to be answered went to the consultants at Weston Solutions.

We began the inspection walking through the assembly area of the plant where they have approximately 150 Assembly machining areas. The machining units use the tubes that are made on site from the extruding and molding process and combine the tubes with parts that are bought off site. The machines have various tasks and only certain cells of the machines work through the

day. According to Mark only 1/3 of the machines run at a time for a normal shift, approximately 50 machines. These machines perform different tasks such as attaching parts or bending the tubes to the proper shape before attachments. The machines used do not appear to give off emissions but do create waste oil, which is kept in a 30 gallon drum, no odors were detected near the drum. The waste oil is discarded by a third party and it is done every 4 months. The machining area has large storage areas full of bins and equipment. There is also a large area of equipment that is no longer in use, this equipment is waiting to be removed.

The extruding area of the building is separated from the machining area and has 9 extruding/molding lines. While on site there were 7 only lines being used. Discussing typical procedure with Mark he stated they do not use the Corma line often, approximately once a year per Mark. The other extruding/molding lines run 24hours a day for 5 days a week and alternate which unit is turned off. Some of the lines make smooth tubes while others make ribbed tubes. The molds that are used can be rotated out and are maintained throughout the process. Molds that need to be cleaned are taken to the back section of the facility where an electric heater is used with a resin blasting system that heats and cleans the molds. The plastic is heated until it softens and can be taken off the molds in a very small, contained unit. The molds that have any excess residue are taken to the heating tables where a handheld torch is used for final touches, the process is not often used but is available if needed. The facility has 7 Torit bag filter and wax filter systems that pull emissions directly from the extrusion system. The wax filter removed the particulate, and the Torit systems filter any extra particulate that may get through. The systems also have a blower on some of the extrusion lines and that blower is vacuumed out and exhausted externally, the vacuuming helps to ensure the size and design of the tubes.

The final extrusion line called the Beast has 5 extrusion processes that all combine and run through a molding unit that uses a fast loop belt to press the plastic quickly and recycle the molds quickly. This unit has a Donaldson Torit Dryflo system that is larger than the other bag systems. It also has a vacuum system that is used for blowing out the tubes.

The facility has a vacuum system that helps keep the resin pellets dry and moves the pellets to each extrusion line based on the numbering system associated with the extruder. There are 16 dryer units in this facility that are split into two systems that are used for all of the extrusion lines.

The facility has a large chiller system, a cold-water tank and a cooling loop system. The cold-water system holds 800 gallons, and the Cold loop system has a tank that holds 600 gallons and has two chillers. In total the two systems have two tanks that hold a total of 1400 gallons for the entire facilities use.

Following the walk through we met with Brian Gillette to discuss the inspection. The facility was very clean, and odors were faintly detectable during the inspection. After discussion about the facility processes it was determined that Brian would find out what exemptions were to be used for the hand torches as this process was not included in the facility overview from the consultant Weston Solutions.

Conclusion

The equipment that was observed operating during this inspection were being run properly and control measures were in place. The equipment that was not in use during the inspection were clean and prepared to run properly when in use. The facility was very clean and had light to no odors of resin in the extruding area and no odors in the machining side of the building. The only emissions that were observed were the ones right at the point of extrusion and all visible emissions were being drawn into the Torit bag equipment. All the equipment observed met the exemptions stated by the Weston Solutions consultant. The new proposed equipment is also being accounted for in the environmental records from Weston Solutions for the Toyoda Gosei facility.

Following this inspection, it can be determined that this facility is in compliance with the exemptions they have stated and the potentials for Rule 291(2) were done for the proposed equipment.

NAME David Rauch

DATE 03/09/2023

SUPERVISOR RB