

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

N191262782

FACILITY: Domico Med-Device		SRN / ID: N1912
LOCATION: 14241 Fenton Rd, FENTON		DISTRICT: Lansing
CITY: FENTON		COUNTY: GENESEE
CONTACT: Cherie Isaac , Facilities Assistant		ACTIVITY DATE: 03/24/2022
STAFF: Julie Brunner	COMPLIANCE STATUS: Compliance	SOURCE CLASS: SM OPT OUT
SUBJECT: Scheduled compliance inspection PTI Nos. 34-00A		
RESOLVED COMPLAINTS:		

On March 24, 2022, I conducted a scheduled inspection of Domico Med-Device (Domico) in Fenton. The last compliance inspection of the facility was on April 9, 2019.

Contacts:

Mr. Terry Byers, Facilities Manager, 810-750-5300 (ext. 5213),
tbyers@domicomed.com

Ms. Cherie Isaac, Facilities Assistant, 810-750-5300 (ext. 5363),
cisaac@domicomed.com

Facility Description:

Domico manufactures foam / plastic products used in the medical industry, primarily for surgical procedures. The foam products consist of a variety of head rests/supports, foam cushions for the interior of MRI machines, and positioning devices. The facility cuts foam from blanks and coats them in one of 8 spray booths located in the center of the building. They primarily use solvent-based coatings on the foam products.

The facility is located in a large building behind a strip mall right off of Fenton Road.

Domico is a minor source with a potential to emit of less than 250 tons per year (tpy) of any regulated air contaminant. The facility is considered a synthetic minor for emissions of hazardous air pollutants (HAPs) with opt-out limits of less than 9.0 tpy of any single HAP, and 22.5 tpy of aggregate HAPs. The facility has opted out of the Title V - Renewable Operating Permit (ROP) Program and any applicable federal standards with the permitted restrictions on emissions of HAPs. Domico has one active Permit to Install (PTI) No. 34-00A along with several exempt processes.

	Emission Unit Description
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Emission Units (EU) and Flexible Groups (FG) - EU/FG ID	(Process Equipment & Control Devices)
EU-DUSTCOLLECTOR (PTI 34-00A)	Dust collector used to collect refuse materials such as plastic chips, sawdust and composite materials from machining operations.
EU-EMERGENERATOR (PTI 34-00A)	A 500 kW (4.35 MMBtu/hr) diesel fuel-fired emergency generator. The engine model has a manufacturer's date of January 1975 and is therefore not subject to 40 CFR 60, Subpart IIII.
FG-COATING (PTI 34-00A)	Coating booths and ovens associated with the foam parts coating process. (EU-BOOTH1, EU-BOOTH2, EU-BOOTH3, EU-BOOTH4, EU-BOOTH5, EU-BOOTH6, EU-MISCBOOTH1, EU-MISCBOOTH2, EU-OVEN1, EU-OVEN2, EU-OVEN3, EU-OVEN4)
FG-FACILITY	All process equipment source-wide including equipment covered by other permits, grandfathered equipment and exempt equipment.

The facility did have a fluorescent light bulb crusher (DTC) Model 55-VRS (EU-BULBCRUSHER) on PTI 35-15. The light bulb crusher was taken out of service in 2016 to resolve cited violations and has been removed from the facility. The PTI has been voided. The light bulbs are now picked up by a licensed hauler for recycling.

MAERS:

The facility reports to MAERS. The following emissions from FG-COATING were reported for 2021: 4.8 tons of volatile organic compounds (VOC), 6.8 tons of acetone, and 3.6 tons of aggregate HAPs.

Inspection:

Arrived: 9:17 am

Weather: 45 degrees, SW 13 mph, UV Index 0

Departed: 10:25 pm

No visible emissions or odors were identified upon arrival.

I met with Ms. Cherie Isaac. Mr. Terry Byers was not at the facility at the time. I gave a brief overview of the inspection process which was the purpose of my visit, and we discussed facility operations. The facility is currently operating 2-shifts per day, 8-hrs per shift. For coating operations, they run Monday through Thursday from 6:00 am to 4:30 pm, and on Friday if busy. The facility is currently very busy.

Exempt Emission Units:

Facility heat is provided by natural gas-fired HVAC units and air make-up units (0.34 to 4 MMBtu/hr) which are exempt from permitting per Rule 282(2)(b)(i).

EU-EMERGENERATOR (PTI 34-00A):

Behind the main plant building in a locked shed is the diesel fuel-fired emergency Delco A.C. Generator (Model E6700M1). (The generator was not viewed with this visit due to lack of access but it was confirmed that there have been no changes.) EU-EMERGENERATOR is a 16 piston Detroit Diesel capable of producing 500 kW (Serial No. 8 L 74) and is covered under PTI 34-00A. The generator was purchased used.

The generator is strictly for emergency use and no power is sold to a distribution system. The unit is typically only operated for operational testing. No emergency operation has occurred in recent history. The unit has a manufacturer's date of Jan. 1975 and is therefore not subject to the New Source Performance Standard (NSPS) in 40 CFR 60, Subpart IIII. The engine (on the generator) is subject to the Maximum Achievable Control Technology (MACT) standard in 40 CFR 63, Subpart ZZZZ as an existing emergency unit located at an area source of HAPs. AQD doesn't inspect for compliance with this MACT at an area source but the engine on the generator appears to be complying with all applicable MACT requirements.

A copy of Diesel Genset Run Log showed from April 2021 to March 2022, engine hourmeter (counter) hours of 2429.4 to 2430.3 for a total of 47 minutes of run time for the 12-month time period. Based on Work Orders for preventative maintenance that were provided (for January 2021 to January 2022) and kept as required by Special Condition (SC) VI.3, the NOx emission limit in SC I.1 is being met because the generator is being properly maintained. The unit has never been tested nor does it need to be tested per SC V.1. Only diesel fuel as required by SC II.1 is combusted in the generator. Ultra low sulfur diesel at 0.0015% sulfur by weight is used in the

generator which is well below the permit limit of 0.05% sulfur by weight in SC II.2. Oil usage is tracked on an as purchased basis and by sticking the fuel oil tank. The amount of fuel oil used from April 2021 to March 2022 (for run testing) was 6.27 gallons which indicates that they are well below the permit limit of 136,000 gallons per 12-months as required by SC III.3. Fuel oil use records are kept as required by SC VI.2 and VI.5. There is no record for SC VI.4 because no electricity produced by EU-EMERGENERATOR is sold to a utility power distribution system.

The generator has two (2) vertical stacks in compliance with SC VIII.1.

A 500 to 550 gallon horizontal fuel oil tank with secondary containment is also located in the generator shed. The fuel oil tank is exempt per Rule 284(2)(d). A 55-gallon drum of used oil was located beside the tank.

EU-DUSTCOLLECTOR (PTI 34-00A):

Outside of the main building is a blue dust collector used for collection of dust from the machine shop. This is included in PTI 34-00A. It is inside of a fenced area. No particulate was seen on the ground around the unit. There is no pressure drop gauge on the unit, and no way to tell if it is operating properly. There were no holes in the discharge socks connected to the four (4) 55-gallon drums that sit under the unit to collect particulate removed. (The recommendation from last inspection that the discharge socks be replaced was apparently taken.) The unit is checked every two weeks and the 55-gallon drums are emptied maybe two to three times a year. The dust collector connects to a room air pickup located in the ceiling of the machine shop, so the dust collector probably does not pick up large enough particles that would end up in the 55-gallon drums. Compliance with the emission limit in SC I.1 is assumed as there is no evidence otherwise. The exhaust vent stack on EU-DUSTCOLLECTOR is horizontal, and probably at the minimum height of 13 feet as allowed in PTI 34-00A.

Also, in the fenced area is a small white vacuum unit which is exempt per Rule 281(2)(a). Located out back is a trash compactor beside the dust collector.

FG-COATING (PTI 34-00A):

The coating operations are located in a separate room that has six (6) spray booths plus two (2) spray booths for miscellaneous foam gluing operations. The coating operation is still 1 shift, 10 hours per day. Acetone is used for clean-up and paint changes. Spray operations in 3 of the booths were occurring at the time of inspection. At least two of the eight paint spray booths were operating simultaneously meeting the requirements in SC III.4. Foam medical aids were being sprayed. The foam parts arrive pre-cut and are coated manually. There are pressure pots in the booths for when unusual and low use colors are sprayed, and spray gun

applicators are connected to the paint kitchen for high volume coatings. The spray guns are Binks applicators marked high volume low pressure (HVLP) identification on the side of the spray guns. The booths have dry filters for particulate control which are changed at the end of the day, or if needed in the middle of the day, per a preventative maintenance (PM) schedule meeting the requirements in SC IV.1.

The permit lists four (4) drying ovens: EU-OVEN1, EU-OVEN2, EU-OVEN3, EU-OVEN4. Parts are air-dried and the ovens appear to have been removed.

The paint kitchen which feeds the booths has capacity for pumping paint to 10 lines from 55-gallon drums. The paint coatings can be thinned with acetone. The paint kitchen is in a separate room.

The paint coating used is logged daily and usage is entered into a Microsoft Access database. Copies of the daily log sheets for January 3rd to March 15th were obtained during the inspection. (Logs included in the electronic database with the report.)

Five (5) SDS were obtained for F-830 Muraculon series, C557 White (23-0238), C787 Polar White (23-0128), C839 Off White, C668 Mist Gray (23-0246) and C3 Mist Gray (23-0244) coatings. The coatings are solvent-based and contain acetone. The VOC content ranges from 3.3 to 3.4 lb/gallon based on the information in the SDS obtained. The permit does not have any VOC coating content limits. Records for monthly and the 12-month rolling mass emission calculations were sent.

There are daily emission limits for isopropyl alcohol and xylene. Isopropyl alcohol is not used in the facility. Xylene emissions are calculated on a monthly basis. Since coating usage is tracked daily, if the coating contains up to 10% xylene and with a limit of 55.0 lb/day, then ~72 gallons of coating containing up to 10% xylene can be used per day. The highest daily amount of coating used in the booths in January 2022 was 23 gallons on 1/15/2022 with a total usage of 254 gallons for all of January 2022. Coating was done on 23 days in January 2022 which amounts to an average of 11 gallons per day which is below the estimated 72 gallons per day estimated by AQD before the xylene emission limit is exceeded. Clearer tracking of daily usage of xylene is needed. Also, only daily usage for January 2022 was totaled but the records sent actually showed 179 gallons used not the ~254 gallons as added up by AQD from the daily sheets. The differences in the daily sheets and the usage in the electronic record does need to be explained.

The facility has not requested permission to use manufacturer's formulation data per SC V.1. The VOC content information for coatings used is provided by the paint supplier mainly on the SDS. A Method 24 has been run on a commonly used coating base, F-830 Clear Muraculon. The results showed a VOC content of 5.06 lb/gallon (minus water) and 3.19 lb/gallon (with water). The VOC content used in the records and to calculate emissions is 3.22 lb/gallon (with water) for F-805 coatings, 3.25

lb/gallon (with water) for F-830 coatings, and 6.73 lb/gallon (with water) for F-892 coatings. It is recommended that a Method 24 be run annually on a few of the most commonly used coatings.

They are coating plastic parts, and Reasonably Available Control Technology (RACT) for automobile, truck, and business machine plastic part coating lines is defined in Rule 632. Since they are coating medical equipment and the facility is not located in a county that is subject to the provisions of this rule, Domico is not subject to the RACT limits in Rule 632.

Compression foam molding:

They have a very large press and press handling system (hot press) and cold press, and can form large parts such as full length table supports and full body supports. Specially formulated foam-boards are heated and mechanically formed into the desired shape. There are no emissions from this process.

Machine Shop:

CNC machining –The CNC is a high-power, high-speed router head that is used to cut three dimensional shapes in foam pieces. This method differs from traditional machining because traditional machining uses a slow speed and cuts large strips on a lathe, whereas the CNC machine cuts very small chips at high speed using a movable router head. Any foam from the process is vacuumed up. The hose for the small white vacuum is on the wall.

Britten milling center and three (3) milling centers – Cut both plastic and metal parts. Bins collect plastic and metal chips. The three (3) milling centers are wet. A Havco milling center and saw located in the room are also wet. There were no emissions from the cutting of plastic and metal parts, and the units have no external exhausts.

The machining processes appear exempt per Rule 285(2)(l)(vi)(B).

Carbon Fiber Parts Manufacturing:

Carbon fiber raw material is received in sticky sheets and refrigerated until used. In a climate controlled room, the sheets are cut, the layers stuck together, applied to a mold, and then put in an electric autoclave where heat and pressure is used to form the part. The atmosphere in the autoclave is nitrogen which is an inert gas. Pressures used are 30 psi, and high temperatures of 350°F to low temperatures of 250°F are used. No emissions to the ambient air are expected from the process.

The finished carbon parts are sent out for machining, but some sanding and grinding of the carbon parts are done in a separate room. Grinding of carbon parts is done in two (2) booths with fabric filters. The filters are changed every couple of weeks. The booths vent to a baghouse with an internal exhaust vent back into the plant. A small bag under the baghouse collects particulate from the process. The baghouse is an Advanced Dust Collector, Model No. 30506093, Serial No. 1034031100, HP 15. The carbon parts machining is exempt per Rule 285(2)(l)(vi)(B).

Finishing Areas:

Other processes at the facility include various cutting, sewing, binding, soldering, and fabrication of foam products. A heat seal process includes cutting foam sheets to size, covering them with vinyl, sewing and then heat sealing at 147°F in an electric oven.

There is also an electric heated chamber pot for humidification of parts, and shipping and receiving.

Records:

EU-EMERGENERATOR:

1. Records of the date, duration and description of any malfunction, any maintenance performed and any testing results for EU-EMERGENERATOR.
 1. Records of hours and fuel used obtained for April 2021 to March 2022
 2. Work orders from January 2021 to January 2022
 3. SDS Diesel No. 2 Marathon
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FG-COATINGS:

1. Copies of the daily log sheets for January 3rd to March 15th.

Records of the hours of operation of each paint booth including the date and time that each paint booth were operated are not being logged on the daily sheets that were obtained. This is required by SC III.4. This needs to be kept in a format acceptable to the AQD.

2. Monthly records for all coating usage from April 2021 to March 2022 with VOC, Acetone, total HAP and mass emission calculations determining the monthly and the annual emission rate in tons per 12-month rolling time period are attached.

- April 2021 to March 2022: VOC emissions were 4.02 tons and acetone emissions were 1.57 tons for a total of 5.6 tpy combined. The facility is well below the 45.0 tpy VOC/acetone emission limit but the usage of acetone for clean-up needs to be better defined in the record.

FG-FACILITY:

- April 2021 to March 2022: Aggregate HAP emissions were 1.9 tpy. The highest individual HAP emitted was toluene at 1.4 tpy. This is below the HAP emission limits of less than 9.0 for an individual HAP and less than 22.5 for aggregate HAPs.

Summary:

The facility appeared to be in compliance with PTI 34-00A, and applicable rules and regulations. Some recordkeeping items need to be included (i.e., daily emission records for xylene and spray booth operating hours) as noted above. Differences between the daily log "Emissions Reporting Data" total usage for the month versus what is listed in the electronic records needs to be explored. Just based on January 2022 logs, usage in the booths is higher than used in the electronic records to calculate "COATING USAGE IN POUNDS".

Follow up on the differences in coating usage and a record of acetone usage for clean-up is pending.

NAME Julie L. Brunner

DATE 5/4/2022

SUPERVISOR *BM*