

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

N725662143

FACILITY: UNIVERSAL COATING INC.		SRN / ID: N7256
LOCATION: 5204 ENERGY DR., FLINT		DISTRICT: Lansing
CITY: FLINT		COUNTY: GENESEE
CONTACT: Julie Taylor , Risk Manger - Q.M.R.		ACTIVITY DATE: 01/14/2022
STAFF: Robert Byrnes	COMPLIANCE STATUS: Unknown	SOURCE CLASS: MAJOR
SUBJECT: FY 2022 scheduled inspection.		
RESOLVED COMPLAINTS:		

On January 14, 2022 I conducted an announced inspection of Universal Coating Inc. I arrived at the facility and met with Julie Taylor who helped with site visit, records collection, permit review and discussions. The facility is a major source of HAP and is covered by MI-ROP-N7256-2017a and PTI 146-19. An ROP renewal application was timely for the facility was submitted on January 14, 2022. The facility typically operates 3 shifts, 5 days per week with some Saturdays for dip spin and hand spray paint work.

Universal Coating processes include a phosphate process, and multiple methods (dip spin, roll coater, spindle lines, hand spray booths, tumble sprays, etc.) of applying colors and adhesive coatings to metal and plastic parts. Some of the processes at the source are used on an "as needed" basis and are always used in production.

The last submittal of records was for the second half of 2021. Records are required semi-annually by June 30th for the first half, January 30th for the second half of the year. Copies of the July 2021 through December 2021 records were reviewed for the purposes of this inspection.

ROP Emission Unit Identification : MI-ROP-N7256-2017a

Emission Unit ID	Emission Unit Description	Compliance
EU-SANDBLAST	Sandblast cabinets using a variety of blast media, and a polisher, used to pre-treat metal parts. All units have control.	Yes
EU-METALREPAIR	Welding units, metal punch, grinder, drill press, etc. all used to repair metal parts.	Yes
EU-HEATING	Nat. gas-fired furnaces at 0.2 MMBtu/hr & air make-up units rated at 2.5 MMBtu/hr used for indoor air heating and ventilation.	Yes
EU-BURNOFF	A batch type nat. gas-fired burnoff oven w/ an afterburner	Yes
EU-DEGREASER	Vapor degreaser w freeboard refrigeration device and working-mode cover.	Yes

Emission Unit ID	Emission Unit Description	Compliance
EU-POWDERCOAT	1 manual powder coating booth with a filtration control system.	Yes
EU-PHOSPHATE1	A phosphate pre-treatment line for metal parts consisting of 16 tanks and one steam heated dryer. The tanks are heated by electric coils or steam heated by 2 shared natural gas-fired boilers.	Yes
EU-PHOSPHATE2	A phosphate pre-treatment line for metal parts consisting of 14 tanks and 2 steam heated dryers. The tanks are heated by electric coils or steam heated by 2 shared natural gas-fired boilers.	Yes
EU-PHOS-PROTO	A proto-type phosphate line for metal parts consisting of ten (10) tanks and one electric or steam heated dryer. The tanks are steam heated by three (3) shared natural gas fired boilers. Note: Three steam boilers are subject to MACT-DDDDDD.	Yes
EU-PHOSPHATE3	A proto-type phosphate pre-treatment line for metal parts consisting of 10 tanks and one dryer. The tanks are heated by electric coils or steam heated by 2 shared natural gas-fired boilers.	Yes
EU-DS1	1 dip spin unit to coat metal parts.	Yes
EU-DS2	1 dip spin unit to coat metal parts.	Yes
EU-DS3	1 dip spin unit to coat metal parts.	Yes
EU-H1	1 manual misc. metal parts spray booth with 4 associated ovens. (The ovens are shared with EU-H2 and EU-H3).	Yes
EU-H2		Yes

Emission Unit ID	Emission Unit Description	Compliance
	1 manual misc. metal parts spray booth with 4 associated ovens.	
EU-H3	1 manual misc. metal parts spray booth with 4 associated ovens.	Yes
EU-CE2	Spindle line: Two (2) automatic miscellaneous metal/plastic parts spray booths (T1 and T2) with two IR ovens connected by a chain-on-edge (CE) conveyor system and controlled by regenerative thermal oxidizer.	Yes
EU-CE1	Spindle line: Two (2) automatic miscellaneous metal/plastic parts spray booths (T3 and T4) with two IR ovens connected by a chain-on-edge (CE) conveyor system and controlled by regenerative thermal oxidizer.	Yes
EU-CE3	Spindle line: One (1) automatic miscellaneous metal/plastic parts spray booths with two IR ovens connected by a chain-on-edge (CE) conveyor system and controlled by regenerative thermal oxidizer	Yes
EU-CE4	Spindle line: Two (2) automatic miscellaneous metal/plastic parts spray booths (T5 and T6) with two IR ovens connected by a chain-on-edge (CE) conveyor system and controlled by regenerative thermal oxidizer	Yes
EU-CE5	A spindle conveyor adhesive coating line equipped with pre-heat oven and dry oven is controlled by a regenerative thermal oxidizer.	Yes
EU-RC	A roll coater (RC) line equipped with drying oven and is controlled by a regenerative thermal oxidizer.	Yes

Emission Unit ID	Emission Unit Description	Compliance
EU-TS3	A tumble spray (TS) controlled by a regenerative thermal oxidizer.	Yes
EU-TS4	A tumble spray (TS) controlled by a regenerative thermal oxidizer.	Yes

Flexible Group Identification

Flexible Group ID	Emission Units Included in Flexible Group	Compliance
FG-PHOSPHATELINES	EU-PHOSPHATE1, EU-PHOSPHATE2, EU-PHOSPHATE3, and EU-PHOS-PROTO	Yes
FG-DIPSPINS	EU-DS1, EU-DS2, EU-DS3	Yes
FG-H1/H2/H3	EU-H1, EU-H2, and EU-H3	Yes
FG-MISCMETAL/PLASTIC	All metal parts coating lines source-wide, including metal parts coating lines covered by other permits, which are exempted by R 336.1621(10)(b). All plastic parts coating lines source-wide including plastic parts coating lines covered by other permits, which are exempted by R 336.1632(15)(b).	Yes
FG-RTO	Eight (8) controlled metal/plastic parts coating lines Associated purge and cleanup is included.	Yes

Flexible Group ID	Emission Units Included in Flexible Group	Compliance
FG-FACILITY	All process equipment source-wide including equipment covered by other permits, grand-fathered equipment and exempt equipment.	Yes

EU-SANDBLAST There are currently 17 different sand blast stations which range from small hand blast cabinets to the larger Wheelabrators. Approx. five blasting units share common duct work exhausting through two bag house control devices. The bag houses are contained in a separate room connected to the main building. The units exhaust into the room. Several smaller tumbling, blasting, and polishing units vent directly into the main blasting room. Note: Hearing protection should be used in this area as the unloading and loading of parts creates noise. None of the units were in operation during my inspection as there were cleaning activities and the abrasive materials were being replaced on a couple units. I did not witness any visible emissions and the room containing the units was very clean. See the 2017 inspection report for a drawing of the locations and types of blast units in the sand blast room.

EU-METALREPAIR

This emission unit consists of various welding units, a metal punch, grinder, drill press, etc. used to repair metal parts, repair equipment and/or conduct equipment maintenance. This equipment is typically covered by an exemption but for the purposes of this site are included under this emission unit. The emission unit in the permit does not have any emission limits, material limits, process/operational restrictions, design/equipment parameters, testing/sampling or monitoring requirements. The only requirement is that the exhaust gases from the equipment shall be discharged into the general plant environment. There were no capture devices or stacks associated with this equipment.

EU-HEATING

This emission unit is for a 0.2 MMBTU/hr comfort furnaces for a storage area and for air make-up units rated at 2.5 MMBTU/hr used for indoor air heating and ventilation. Both units burn natural gas as required by material limit SC III.1. There is 1 stack associated with this emission unit for the air make up unit. The storage area heater vents outside but does not have a stack requirement.

EU-BURNOFF The burn-off oven was operating during my site visit and was in follow up to previous observations by Dan McGeen who took pictures of opacity coming from the unit. Universal Coating has implemented changes to the operating process which has addressed the issue of opacity. Universal has extended the burn time in the main chamber to 1 hour and 15 minutes. This in conjunction with a proper temperature in the afterburner chamber have eliminated any observation of opacity.

The burn chamber cycle is preset so that the primary chamber does not initiate until after the afterburner reaches temperature. The oven prints a temperature map on a circle disk. The oven is only used for removing coatings from tooling used on the applicator lines and occasionally it is used to remove coating from parts as indicated in the records attached to this report. The oven is used approx. for two batches per week. During this site visit the burn chamber was operating at 796 degrees Fahrenheit while the afterburner was at 1469 degrees Fahrenheit. Both thermocouples were recalibrated on December 20, 2021. A review of past strip charts were reviewed from the records on site and all records appeared to show the afterburner was operated above 1400 degrees Fahrenheit as required by SC IV.4.

From previous inspection in FY 2019

A strip chart record was obtained from January 2, 2020 through January 14, 2020. The temperature chart indicated that 1400 degrees Fahrenheit was not obtained during these days of operation as required by EU-BURNOFF special condition IV.1. Also, this violation appears to violate SC IV.2 and IV.3 as the interlocks did not prevent operation of the unit. This has been an ongoing concern as mentioned in previous inspections listed below. It is recommended Universal Coating provide the date by which the replacement unit will be installed and what they will do to either fix the burn off oven or ship the parts cleaning elsewhere. The thermocouple was last calibrated on January 21, 2020 per Phil at a temperature of 1341 degrees Fahrenheit.

From the previous inspection in FY2017.

A copy of the temperature chart for the afterburner was reviewed and non-compliance issues are still occurring. The chart was overwritten multiple time as the single chart covered from January 2018 through April 2018. The chart also only went up to 800 degree's Fahrenheit but the afterburner is required to operate above 1400 degree's. There also was no record on site of calibration of the thermocouples. The facility is in violation of EU-BURNOFF special conditions IV.1, IV.2, VI.2 and VI.3. The facility will be given 1 month to submit a response addressing the non-compliance issues and provide a corrective action plan to assure the issues will not re-occur. The facility was also reminded these were also violations in the previous 2015 inspection. Further inaction or continued issues will result in a violation and referral to the enforcement unit for resolution.

EU-DEGREASER A single vapor degreaser unit exists. It is subject to MACT Subpart T. It was not in use during my inspection. Instructions are posted on the unit. MACT reports are sent in twice a year. See file records for MACT Subpart T compliance information. Emission records were reviewed for 2021 with solvent material additions in January, April, May, June and November. Here are following emission/usage limits for the 3 highest months.

	January 2021	June 2021	November 2021	Compliance?
SC I.1, 268.8 pounds/month	93.4	162.4	52.8	Yes
SC II.1, 22.2 gallons/month	7.7	13.3	4.3	Yes
40 CFR 63.464, 30.6 pounds/ft ² /month	10.7	18.6	6.0	Yes

EU-POWDERCOAT the powder coat unit is small and designed to be moved about the facility as needed. It was not in use during the inspection. However, Julie Taylor did state the powder coating was conducted in a spray booth, but the fans are turned off during powder coating operations. EU-Powdercoat requires that exhaust gases be released only into the general in-plant environment (SC VIII.1).

FG-PHOSPHATELINES Three phosphate lines are installed and all lines were in operation during the inspection. FG-PHOSPHATELINES has an emission limit for VOC at 1.0 tpy. Review of the October, November and December 2021 emission rates show 19.5, 18.9 and 19.5 pounds VOC emitted per month respectively. The 12 month rolling total values were at 0.1 tons (less than the 1.0 ton limit) for the months of July 2021 through December 2021. See report in Content Manager for emission rate details.

FGDIPSPIN Total VOC emissions from the dip spin operations for the 12-month period ending in December 2021 was 0.1 tons. The limit is 5.0 tons. VOC emissions reported for July through December 2021 was a maximum of 119 pounds which is less than the limit of 2000 pounds/month. See reports and the Semi-Annual ROP reporting in Content Manager for more emission rate details.

FGH1/H2/H3 Three booths are installed. A shared exhaust header feeds all three booths to a common stack. The stack appeared to be of the appropriate height and diameter. Filters were in place. Two of the spray booths have a tumble spray operated inside which exhausts via the booth to atmosphere. VOC records for the tumble sprays are kept under EU-Tumble spray. Total VOC emissions from the hand spray booths for the 12-month period ending in December 2021 were 0.1 tons. The limit is 5.0 tons. VOC emissions reported from July through December 2021 was the highest in July 2021 at 28 pounds which is below the limit of 2000 pounds/month.

FGMISCMETAL/PLASTIC

This particular flex group limits the total exempted amount metal parts VOC uncontrolled and plastic parts VOC uncontrolled to less than 30 tpy each. Because the emission units that are uncontrolled (Dip spins and hand sprays) have limits of 5 tpy each they could not exceed these limits without additional R287 sources. As such, no record was obtained but just by adding dip spins plus hand spray plus R287 sources they 0.1 tpy plus 0.1 tpy plus a 287 line with a PTE of 6 tpy they all total 6.2 tpy which is well below the 30 tpy limit. The facility should also be keeping a record of these emissions if they do not already do so. No request for this record was made during this inspection.

FG-RTO

This flexible group covers 8 controlled metal and plastics parts coating lines (including clean up and purge materials). This includes 5 chain on edge lines (CE-1 through CE6), the roll coater and 3 tumble spray units (TS3, TS4 and TS5). The capture efficiency and destruction efficiency were tested on January 30, 2017. Results from the testing confirmed a PTE with 100% Capture Efficiency (CE), and 99.4% Destruction Efficiency (DE). The following operational parameters were observed during the inspection:

RTO Chamber 1550 degrees Fahrenheit (previously 1573,1560)

Inlet temperature (not observed) degrees Fahrenheit (previously 102.8, 104.9)

Outlet temperature (not observed) degrees Fahrenheit (previously 245.0, 216.4)

Fan (Not observed) Hz (previously 49.1, 51.85)

And 1.2” (0.4” avg.) delta P across the RTO (previously 20”)

Records were reviewed on site the RTO chamber temperature for January 1, 2021 through January 14, 2021. The RTO temperature was always above 1500 degrees Fahrenheit (lowest temperature 1500 deg. And typical operating temperature of 1550 deg.) No copies of the maintenance records were obtained during this inspection. The thermal couples were last calibrated on August 30, 2021. Stack testing for Destruction Efficiency (DE) and Capture Efficiency (CE) was also conducted on 11/2/21 and 11/3/21. DE final results were 98.2% DE while CE is 100% as the facility operates as a PTE. For CE testing, all NDO sizes were verified by H&H testing as well as the face velocity of each chain on edge line ducted to the RTO. The following face velocities were observed from the CE test report.

Emission Unit	Measured Face Velocity (min 200 ft/min for PTE)
EU-CE1	250.24 ft/min
EU-CE2	324.87 ft/min
EU-CE3	267.14 ft/min
EU-CE4	378.51 ft/min
EU-CE5	277.01 ft/min
EU-CE6	295.80 ft/min
EU-CE7	295.21 ft/min

From FY 19 inspection:

Maintenance records show that a visual inspection was performed each quarter, accuracy audits of the flow monitoring devices was performed quarterly and leak checks were conducted on the capture devices on a monthly basis. RTO maintenance records were also obtained showing typical monthly, quarterly, semi-annual and annually serviced items.

The following emission records for FG-RTO were reviewed for July 2021 through December 2021 and are in Content Manager. All emissions were below their respective limits.

Month/Limit	49.7 tons/12 month rolling time period	4.6 tons Methyl Isobutyl Ketone/12	Compliance?

		month rolling time period	
July	1.2	0.2	Yes
August	1.2	0.2	Yes
September	1.2	0.2	Yes
October	1.2	0.2	Yes
November	1.2	0.2	Yes
December	1.3	0.2	Yes

Copies of the emission records are in Content Manager, maintenance records, records of operating parameters and observed values are attached to this report.

FG-FACILITY

This flexible group covers all emission units source wide including exempt and grandfathered equipment. This group includes an Ethyl Benzene (Cas no. 100-41-4) limit of 5.1 ton per year based upon a 12 month rolling time period.

FG-MACT MMMM

Summary emissions of HAP from metal parts coating were obtained for the July 1, 2021 through December 31, 2021 operating period. Review of the Misc. Metal Parts Coating MACT information showed the following emission rates:

Coating Category	December 2021 Emissions	Emission Limit	Compliance?
Rubber-to-metal	0.96 lb HAP/gallon solids (previously 1.7)	37.7 lb HAP/Gallon solids	Yes
General Use	0.1 lb HAP/gallon solids (previously 0.1)	2.6 lb HAP/gallon solids	Yes
Extreme Performance	0.0 lb HAP/gallon solids (previously 0.6)	12.4 lb HAP/gallon solids	Yes

High Performance	0.0 lb HAP/gallon solids (previously 0.0)	27.5 lb HAP/gallon solids	Yes
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All emission rates were below their respective limits. No deviations were reported in which control credit should not be taken. A copy of the summary page of the MACT MMMM submittal is in Content Manager.

FG-MACT PPPP

Emissions of HAP from plastic parts coating were obtained for the July 1, 2021 through December 31, 2021 operating period. Review of the Misc. Plastic Parts Coating MACT showed the following emission rates:

Coating Category	December 2021 Emissions	Emission Limit	Compliance?
General Use	0.15 lb HAP/lb coating solids. (previously 0.12)	0.16 lb HAP/lb coating solids	Yes

All emission rates were below their respective limits. No deviations were reported in which control credit should not be taken. A copy of the MACT PPPP submittal is in Content Manager.

See orange file folders for the full copy of all Semi-Annual Compliance Reports. Universal Coating did express concern and Julie and I had previously discussed compliance options for additional plastic parts being coated in the uncontrolled dip spin units. It was determined they likely could not comply unless a control device is being used. Universal intends to explore it options for future growth which may include new control tumble spray units or an additional oxidizer. We also discussed controlling the dip spin units which may prove to be troublesome for monitoring to show a permanent total enclosure or conduct capture monitoring.

FG-MACT DDDDD

Facility has previously conducted the required tune-ups and is only required to conduct them every 5 years. Originally a VN was sent on 3/16/16 for not conducting the test. Resolution to the VN included an order and the requirement to conduct a tune up.

Conclusion

I did not witness any visible emissions outside off the plant and I did not detect any paint fume smell around the plant. All processes appeared to be working properly and all records were in compliance with their respective limits. Prior VN's for the burn off oven will be considered resolved at this time and will be recommended to be resolved.

The facility has 1 item in question after review of the inspection notes and information collected.

From Previous Inspection 2019:

1. It appears the temperature on the bake off oven did not properly achieve the require 1400 degree Fahrenheit operating temperature. Based upon the previous inspection this was also a deficiency in 2017. Because this potentially has been ongoing for the past 2 years Universal coating should either provide a commitment date to installing and purchasing a new unit or provide documentation over the past 2 years demonstration compliance/non-compliance, the corrective actions to be taken, how compliance will be achieved and what future actions are required.

Further action maybe necessary if corrective actions are not take in a timely manner.

Deficiencies from 2017 inspection:

1. EU-Burnoff special condition VI.2 Thermocouple Calibration

Thermocouples were validated against in house calibrated Fluke 51 (UC082) and validated thermocouples. Reading of the primary (860°F) and secondary chambers(1558.4°F) are well within tolerance. It appears the unit was calibrated however, additional information will be required for the future like, date calibrated, next due date, calibration device certification values and ranges, was the unit in specification, does it meet the specified performance ranges for the thermocouple and were adjustments made to the thermocouple?

1. EU-Burnoff adding log ensuring right chart is used

A chart was created to track what is being put in the oven (tooling or a job order) along with the amount of baskets being put in the oven. The time in and the time out are also recorded along with the date. Usage of this new chart will give more explanation to the burn off oven activities. Although no example of this new record was provided, it should provide documentation that no prohibited materials listed in special condition III.1 & III.2 were placed in the burn off oven.

1. It was confirmed the wheel chart being used on the burn off oven was incorrect the responsible employee has been addressed and ensures to verify correct wheel is used in the future. This response is acceptable, it is also requested that the wheel chart does not get re-written and is only used for the appropriate time frame (1 week?).

NAME Robert ByrnesDATE 3-28-2022SUPERVISOR BM