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DEPARTMENT OF ENVIRONMENTAL QUALITY
AIR QUALITY DIVISION
ACTIVITY REPORT: Scheduled Inspection

A811750401

FACILITY: SUPERIOR METAL FINISHING		SRN / ID: A8117
LOCATION: 3510 MC NICHOLS E, DETROIT		DISTRICT: Detroit
CITY: DETROIT		COUNTY: WAYNE
CONTACT: Robin Petty , Owner/Manager		ACTIVITY DATE: 08/30/2019
STAFF: Terseer Hemben	COMPLIANCE STATUS: Compliance	SOURCE CLASS: MINOR
SUBJECT: PM from Zinc Electroplating and Phosphating		
RESOLVED COMPLAINTS:		

Superior Metal Finishing, Inc.**INSPECTOR: Terseer Hemben (EGLE-AQD)****PRESENT: Robin Petty (Owner)****Phone: 313-893-1050****Date of Inspection: August 30, 2019****SRN: A8117****Address: 3510 East McNichols Ave, Detroit, MI 48212****State: R 336.1201, R 336.1910; R 336.1901.****FACILITY BACKGROUND: A Zinc Plating and Phosphating Process**

The Superior Metal Finishing (SMF) operates 2 open surface zinc electroplating lines: the zinc electroplating and zinc phosphating lines for auto parts at the 3150 McNichols Avenue, Detroit. The SMF previously operated dip spin paint and coating processes in combination at this location. The process was changed to electroplating. The dip spin coating equipment were removed. The permits associated with dip spin coating were voided. The zinc electroplating process galvanizes nails, nuts, bolts, rivets, etc. using hard zinc electroplating procedures. The process consists of alkaline wash, dip, and natural gas fired dryers and ovens. The zinc electroplating emissions are discharged inside the in-plant area and met exemption under Rule 285(2)(r)(vii).

The process uses:

- Electroplating and zinc phosphating tanks and rinse tanks that meet exemption under Rule 285(2)(r)(vii) ...for emissions discharged inside the in-plant environment.
- 2 natural fired gas-ovens rated at the heat input 5,000 BTU/hr. each with maximum operating temperatures of 140 F.
- 2 natural gas fired dryers: The Tumble model type installed 28 years ago, and the equipment is still in service. Both dryers are natural gas fired using single burners. The single burner natural gas and
- ovens met exemption status under Rule 282(2)(b)(i).
- Natural gas fired single burners for hot water and space heating. The burners meet exemption under Rule 282(b)(i) ...for heating using sweet natural gas, synthetic natural gas...equipment that has heat input rating of not more than 50,000,000 Btu/hr.
- Washing/cleaning system aqua-based chemicals. and rinsed with hot water wash system that meets exemption under Rule 285(2)(r)(vii), for equipment used for surface preparation of metals by use of aqueous solutions, except acids.

Two organic chemicals identified among the zinc electroplating electrolytes such as 2-Butoxyethanol and aliphatic amines are high molecular weight liquids combinedly used as wetting agents for fume suppression. The two chemicals, in a mixture, chemically combine to

form an adduct of a heavy molecule with high molecular weight/density and low vapor pressure.

The facility kept MSDS information for all chemicals used at the site. Phosphating process conducted at the site has minimal decomposition of electrolytes into gaseous components.

The zinc electroplating process uses a cobalt-chrome salt complex containing 5% inorganic salt by weight named ammonium bifluoride. A chrome salt complex is applied for chromate conversion process in the phosphating stage. The chromate conversion chemicals are water soluble that do not decompose.

The facility met the SIP exempt Rule 285(2)(r) because metal surface treatment, pickling, acid dipping, cleaning, etching, electropolishing and electroplating processes are undertaken in the electroplating lines, but only released into the in-plant environment. The main pollutant from this source is zinc solution.

The federally rule 40 CFR 63 Subpart N (40 CFR 63.342(d)(4)) for chrome electroplating process regulates processes involving PFOS:

The inspection identified that SMF performs zinc electroplating and zinc phosphating at the facility. SMF is PFOS free [MSDS for bifluoride complex downloaded from google website is in the AQD file].

The process operated by SMF is not regulated under the 40 CFR 63, Subpart A&N. The process does not perform chrome electroplating.

INSPECTION NARRATIVE:

I arrived at the facility location on August 30, 2019, at 1110 hours. The purpose of visit was to perform a scheduled compliance inspection for evaluation of the facility's zinc electroplating and phosphating processes. Temperature at the hour was 73 F – Sunny, with wind speed 6 mph. Humidity was 51%. I was admitted onto the property by Ms. Robin Petty, the owner and president of SMF. We held a pre-inspection conference and went over the inspection agenda items. Ms. Petty informed the facility had not changed any equipment or process from the pre-existing 2 lines of operation: the zinc electroplating lines 1 & 2, and Zinc phosphating lines 1 & 2 since the 2018 inspection visit. We walked through the zinc electroplating tanks area and observed the cleaning, electroplating and phosphating activities. Natural gas dryers and associated ovens were heated using single burners. Combustion gases were discharged in the general in-plant area. We walked outside the building and inspected the stacks for opacity. There were no visible emissions from the facility. The environment appeared satisfactorily maintained. We finally returned to the office for a post-inspection conference.

COMPLAINT/COMPLIANCE HISTORY:

The SMF has not been a source of citizen air quality complaints.

OUTSTANDING CONSENT ORDERS:

None

OUTSTANDING VNs:

None

OPERATING SCHEDULE/PRODUCTION RATE:

The facility operates a 2, 8-hour shift from Monday to Friday with 15 employees.

REGULATORY SUMMARY

Rule 201 (1): The facility met the SIP exempt Rule 201(1) during the permitting stage under Rule 285(2)(r). SMF stated there has not been any modification or change to the process or equipment that would increase pollutants emission consistent with Rule 201(1) requirements. SMF voided the permit previously issued for the painting/coating process

40 CFR 63.342(d)(4): The facility does not electroplate chromium, and the wetting agent has no PFOS content, so the requirement is not applicable. SMF is PFOS free.

40 CFR Part 60, Subpart Dc - Standards of Performance for Small Industrial, Commercial, Institutional Steam Generating Units:

The direct single-burner heaters at the facility are not subject to Subpart Dc per §60.40c(a). Each burner has a heat input capacity of 5,000 Btu/hour for steam generation.

40 CFR Part 63, Subpart T – National Emissions Standards for Hazardous Air Pollutants for Halogenated Solvent Cleaning.

The process uses alkaline-wash system for cleaning. The SDS indicates the cleaner has minimum VOCs or organic composition. Therefore, the facility is not subject to Subpart T. The materials used in cleaning does not contain any of halogenated HAPs as defined in §63.460.

40 CFR Part 63, Subpart JJJJJJ – National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boiler Area Sources

The single burner heaters are not subject to Mact, Subpart 6J or 40 CFR 60, subpart Dc.

PERMIT TO INSTALL EXEMPT EQUIPMENT

Ovens and Heaters

The natural gas fired single-burner boilers and ovens (each approximately 5,000 Btu/hour) are exempt from PTI requirements under the following rule, which states-

R336.1282(2)(b)(i): “The requirement to obtain a PTI does not apply to...fuel burning equipment... which burns only... sweet natural gas, synthetic natural gas...and the equipment has a rated heat input capacity of not more than 50,000,000 Btu per hour”

Pre-Alkaline Wash System-The Pre-alkaline wash cleaner at the facility is exempt from PTI requirements under the following rule, which states,

R336.1281(2)(e): “The requirement to obtain a PTI does not apply to... equipment used for washing or drying materials where the material itself cannot become an air contaminant, if no volatile organic compounds that have vapor pressure greater than 0.1 mm of mercury at standard conditions are used in the process and no oil or solid fuel is burned. The wash is a bulk aqueous solution with less than 1% VOC composition.” The facility is exempt from this requirement under Rule 285(2)(r)(vii) as applied.

The inorganic ammonium bifluoride has less than 1 % organic or VOC component and contains water as a bulk solvent.

Rule 301: There was no visible emission from the facility at the time of the inspection.

Rule 910: SMF has no add-on control device in use when the facility changed the process to zinc

electroplating operations.

Rule 901: There were no unusual odors outside the building or boundaries of the property during the inspection the processes.

APPLICABLE FUGITIVE DUST CONTROL PLAN CONDITIONS:

This facility did not have nor was in need of a fugitive dust plan.

FINAL COMPLIANCE DETERMINATION:

The inspection of the zinc electroplating and phosphating facility operated by SMF determined the facility operated in compliance with Michigan air pollution control req

NAME *JL* DATE 10/8/19 SUPERVISOR *JK*