B3366
MANILA

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

B336650012

FACILITY: Micro Platers Sales, Inc.		**SRN / ID:** B3366
LOCATION: 38300 VAN BORN ROAD, WAYNE		**DISTRICT:** Detroit
CITY: WAYNE		**COUNTY:** WAYNE
CONTACT: Walt Cisco , Plant Manager		**ACTIVITY DATE:** 07/26/2019
STAFF: Terseer Hemben	**COMPLIANCE STATUS:** Compliance	**SOURCE CLASS:** MINOR
SUBJECT: Hard Chrome and Decorative Chrome Electroplating		
RESOLVED COMPLAINTS:		

SCHEDULED INSPECTION
INSPECTED BY : Terseer Hemben, EGLE-AQD
PERSONNEL PRESENT : Walter Cisco (Supervisor)
FACILITY PHONE NUMBER : (734)-718-2953
FACILITY FAX : (734)-729-4869
DATES OF INSPECTION : 7/26/2019
Micro Platers Sales, Inc.
38300 Van Born road, Wayne, MI 48184
SRN: B3366

FACILITY BACKGROUND:
The Micro Platers Sales Inc. (MPS) is an open surface decorative nickel-chrome plating and powder coatings service. The facility was registered as Hajjar Plating service since 1986 and changed to Micro Platers Sales, Inc in 1999. The facility is a small job shop that coats different metal parts such as auto bumpers and slot machines. The operation uses plating and rinsing tanks that are installed in series and set up in 2 parallel lines. Pre-cleaning of metal parts involves grinding and polishing. Some emissions from the pre-cleaning process are discharged inside the in-plant environment and covered under exempt rule 285(2)(l)(vi)(B) and some particulate emissions are managed using dust collector and covered under the WC-6486. The designated pre-cleaning unit at the facility is the handwash system whose regulatory condition is addressed in the discussion. The facility operates an 8-hour shift per day, occasionally 6 days per week. The facility has 15 employees.

Equipment involved in the chromium electroplating include:

- **Open surface chromium tanks, nickel plating tanks and rinse tanks, which are exempt under Rule 285(2)(r)(vii) …for emission discharges from chromium, zinc phosphating and Nickel electroplating processes that are released into the general in-plant environment.**
- **1 LARS natural gas fired boiler rated at 500,000 BTU/hr.**
- **A rectifier rated at 4,000 ampere/hour.**
- **1 glove box sand box, enclosed sandblaster, buffing wheel, and dust collector with baghouse permitted under Wayne County (WC) Permit C-6486.**
- **A hand-cleaner basin with dimensions 2' by 3' with a cover using an aqueous solution called Cleaner SSP 140 (SDS attached) that replaced the previous AKOKleen 2-S.**
- **A 55-gallon drum size carbon wastewater treatment for PFAS/PFOS reduction in wastewater stream. Process wastewater is treated for reduction of PFAS/PFOS trace in water.**

INSPECTION NARRATIVE

I arrived at the premises of the MPS on July 26, 2019 at 1000 hours. The purpose of visit was to conduct a scheduled regulatory compliance inspection of the plating facility according to the state and federal rules. Temperature at the hour was 78 F. with no wind, and humidity at 58%. I was admitted onto the site by Mr. Walter F. Cisco, the Supervisor. Mr. Cisco and I went over the pre-inspection agenda and discussed the matters regarding to the electroplating operation. We toured the plating line and surface finishing equipment area, including the dust collection system, carbon filtration system and LARS boiler. We concluded the meeting with a post-inspection conference. MPS provided a copy of laboratory analysis of the carbon filtration system water sample attached in report [Attachment M, Pgs.38-41]. I left the area at 1105 hours.

COMPLAINT/COMPLIANCE HISTORY:
MPS 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 regular 8-hour shift, and 5-6 days a week.

PROCESS DESCRIPTION:
The MPS operates the under Wayne County (WC) Permit# C-6486, the Buffing Wheel, Sand Blasting Collection Cyclone and Baghouse. The equipment remains installed and operational at the site. The WC permit did not come with specific operating conditions for enforcement.
The control mechanism for equipment is built in the process itself. The electroplating process uses alkaline wash for cleaning. The plating tanks are equipped with mist illuminators 3 type, and the nickel-chromium tanks are controlled with mist eliminating fume suppressant that is stated to be Perfluoro-alkyl (PFAS/PFOS) free. The MPS facility installed a carbon filtration kit as back up support for removal of PFOS traces in wastewater streams. The pollutant in this process is Cr+6. Details of controls utilizing fume suppressant use, surface tension limit compliance and the SDS information are on AQD file. The SDS information submitted by the MPS following the 2018 emission regulatory inspection showed the surface tension reducing agent was Ethoxylated Coconut Oil. The list of new chemicals added is attached with supporting SDS. No change had been made to the process or equipment.

APPLICABLE RULES AND CONDITIONS:
The MPS facility is subject to the provisions of Rule 941 and NESHAP, of 40 CFR Part 63, Subpart N for Hard & Decorative Chromium Electroplating and Chromium Anodizing tanks. However, the Cr. Electroplating process tank, whose emissions are released into the general in-plant environment, is exempt from the provisions of Rule 201(1) pursuant to the provisions of Rule 285(2)(r)(vii). Gaseous discharge from Nickel process are also released into the general in-plant environment.

The NESHAP requirements applicable to the electroplating process are discussed in the following order: a) Emission limits, b Work practice standards, c) Performance testing, d) Monitoring, e) Recordkeeping, and f) Reporting.

The MPS was classified as an existing area source decorative chrome electroplating operation since commissioned as Hajjar plating in 1986. Typically, the facility purchases 900 lbs. of chrome per year and plates out 90% of the charged Cr. Detail history of production output, which remains unchanged is in previous inspection reports on AQD file.

a) **Emission Limits**

The chrome NESHAP 40 CFR 63.342(d)(1) specifies that the concentration of total chromium in the exhaust gas stream discharged to the atmosphere should not to exceed 0.007 milligrams/dry standard cubic meter (mg/dscm). Facilities can typically achieve this limitation by using a control and monitoring of the surface tension (force/unit length) of the chromium electroplating tanks. Pursuant to the provisions of 40 CFR 63.342(d)(3), the facility can demonstrate compliance with the emission limit of 0.007 mg/dscm by not allowing the surface tension of the decorative chrome electroplating bath to exceed 40 dynes/centimeter, as measured by a stalagmometer. MPS chose the surface tension monitoring through electroplating solution wetting agent addition and monitoring. Copies of the recent 12 months surface tension test results (7/13/18-7/26/19) of the chromium electroplating tanks bath showed a maximum surface tension value of 39.2 dynes/cm on 7/8/2019 as measured by a stalagmometer. This result compared less than the required limit of 40 dynes/cm.

USE OF PERFLUORO ALKYL CONTAINING CHEMICALS FOR FUME SUPPRESSION

Fume suppressants popularly used in electroplating processes are known to contain Polyfluoroalkyl compounds and its homologous series. The EPA recently classified Perfluoroalkyl and polyfluoroalkyl substances (PFAS) also known as PFCs as emerging contaminant on the national level.

NESHAP chromium section 40 CFR 63.342(d)(4) prohibits the use of fume suppressants containing perfluorooctane sulfonic acid (PFOS) and homologous series in decorative chromium plating baths. The SDS information provided by MPS indicated the fume suppressant composed of Ethoxylated coconut oil (an Alkyl Amine). SDS indicates the fume suppressant has no PFOS content [Attachment, pgs. 33 - 41]. MPS also installed a carbon water filtration system to remove PFAS/PFOS traces in wastewater. The facility indicates compliance with the PFOS-free requirement.

b) **WORK PRACTICE STANDARDS**

The chromium NESHAP specifies that the facility must prepare an operation and maintenance plan including the following requirements:

- **Require identification of the operation and maintenance criteria for the tank, control technique, and monitoring equipment.**
- **Provide a checklist to document the operation and maintenance of the tank, control technique, and monitoring equipment.**
- **Incorporate work practice standards.**
- **Include a step-by step procedure for identifying and correcting malfunctions.**
- **Identify procedures to be followed that will prevent malfunctions.**

The facility followed the compliance provisions of 40 CFR Part 63 as listed in Attachment M, pgs.4-41.

c) **PERFORMANCE TESTING**

The facility opted to demonstrate compliance using surface tension limit. Thus, the source is not subject to initial performance testing requirements.

d) MONITORING

The facility must demonstrate continuous compliance by monitoring an operating parameter value for its control technique. In this case, the facility is to show compliance as described in the following table:

Control Technique	Operating parameter	Monitoring Frequency	Operating Limit
Wetting agent-type fume suppressant	Surface Tension	Every 40 hours of operation	33 dynes/cm with tensiometer 40 dynes/cm with stalagmometer

The surface tension tests of the facility's chromium tank were conducted by the facility's chemical vendor on a 40 hour-operation basis as applied. Records indicate the vendor testing complied with the specified monitoring frequency of every 40 hours of operation. Vendor tested the chromium tank electroplating solution at every 40 hours of operation. Attachment M, Pgs. 4-29 shows the facility's monitored surface tension values and electroplating solution concentration top ups. The maximum surface tension value was reported at 39.2 dyne/cm in July 2019. Records of surface tension measurement reports covering the last 12 months operation period of July 13, 2018-July 26, 2019 are attached to this report and indicate compliance with the required 40 dynes/cm limit.

e) RECORDKEEPING

The facility must keep records to document compliance with:

- **Inspection records;**
- **Maintenance records;**
- **Malfunction records;**
- **Performance test results;**
- **Monitoring data;**
- **Excess emission records, and**
- **The facility provided records of a standard operating procedure information followed (Attachment M, pgs. 3 -28);**
- **Process records include (i) operating time for the chromium electroplating tank, (ii) the date and time that fume suppressants are attached.**

The records were kept in a satisfactory manner [Attachment Pgs. 3-41].

f) REPORTING

The facility must fulfill several reporting requirements. The table below summarized what reports are required for the facility and the reporting deadline:

Type of report	Facilities That Must Report	Reporting Deadline
1. Ongoing compliance status report	Area sources	Complete once a year or two times a year if exceedances occur or if requested
2. Notification of construction or reconstruction	All facilities	As soon as practical before construction or construction is planned to begin

3. Notification of when construction or reconstruction is commenced	All facilities	Within 30 days of beginning construction
4. Notification of actual startup	All facilities	Within 30 days of startup
5. Notification of process change	All facilities	No later than 30 days after the process change

Table Item#1
The facility conducted surface tension tests, using a stalagmometer, on the chromium tank on a weekly basis, and kept the testing results in a weekly log. Sample records of the log is attached [Attachment M, pgs. 6-12]

Table Item#2-#5: Not applicable

HYDROCHLORIC ACID (HCl) TANK
The process had not been changed or modified from previous acid concentration limits of 10.8% as determined to be less than the SIP limit of 11% by weight in the previous inspection report. The tank holds a composition of 30% acid and 70% water solution by volume which sums up to be less than 11% acid by weight. Hence the tank remains exempt from the provisions of Rule 201 (1) pursuant to the provisions of Rule 284(2)(h)(iv).

REGULATORY SUMMARY
Rule 201(1): MPS stated the process has not been modified since commissioned, therefore the process operates under the Wayne County permit C-6496 (that has no conditions) that cover the buffing wheel, grinder, sandblaster, dust collector with cyclone baghouse.

Chromium plating process, sanding and handwash cleaning processes met compliance pursuant to exemption Rule 285(2)(l)(vi)(B). The exempt status covers the handwash cleaner, called-the Cleaner SSP-140, composed of bulk Sodium hydroxide and sodium metasilicate that replaced the previous AKOKleen 2-S: The handwash cold cleaner (Cleaner-SSP-140) is operated at room temperature; the cleaner contains componential VOC between 0.1-1 % by weight organics (SDS assay attached). The hand cleaner does not qualify as a cold cleaner (at 5% VOC content) by formula definition. The hand composition is neither a cold cleaner nor degreaser (> 5% VOC and evaporated at above room temperature) because the hand cleaner is operated at room temperature and has minimal VOC content. This evaluation will change accordingly, if the composition of the hand cleaner used at the facility changes, as determined by AQD. The metal cleaning equipment is determined as not subject to Subpart T.
The materials used for the hand cleaner chemical composition do not contain any of halogenated HAPs as defined in §63.460 [SDS in Attachment M, pgs. 33, 38-48] and confirms the cold cleaner at the facility as exempt from PTI requirements under the R336.1285(2)(l)(vi)(B) rule, which covers... emissions from equipment that are discharged inside the in-plant environment.

R336.1707(2) regulates new cold cleaners. MPS' hand cleaner regulatory requirement is excluded from the rule because the Cleaner SSP-140 does not qualify as a cold cleaner by formulation. It is a brown and white powder that is applied as aqueous solution with no known vapor pressure and has VOC content 0.1-1 % by weight in solid material matrix.

40 CFR Part 63, Subpart JJJJJJ – National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boiler Area Sources: 1 gas fired LARS Boiler rated

at 500,000 BTU/hr.: MPS operates 1 LARS boiler. MACT, Subpart JJJJJJ applies to boilers not classified as "gas-fired boilers" at area sources. The boiler at the facility is a natural gas fired boiler. R336.1282(2)(b)(i) allows exemption of the facility from the requirement to obtain a PTI as related 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. The boiler has heat input capacity rating 500,000 BTU/hr., which compares less than the limit. The AQD does not have delegated authority for Subpart JJJJJJ relating to the equipment.

Mist Eliminator: MPS upgraded the control process to use of #26 Havachrome Mist Eliminator 3. The MPS stated the chemical was newly added to replace the previous Havachrome 6 that was PFAS/PFOS free. SDS and Laboratory Analysis submitted support the Havachrome Mist Eliminator 3 (Coconut Oil-Alkyl Amine (20-30% organic) is PFAS/PFOS -free [Attachment M, pgs. 34-41].
Rule 301: There was no complaints of particulate fallout or emissions at the facility at the time of inspection.
Rule 901: There was no complaint of nuisance attributed to the facility's electroplating operation at the time of inspection.

APPLICABLE FUGITIVE DUST CONTROL PLAN CONDITIONS:
This facility does not have nor needs a fugitive dust plan.

FINAL COMPLIANCE DETERMINATION:

The inspection of MPS's chrome plating process observed the facility maintained satisfactory recordkeeping requirement of the federal and SIP regulations. There have been no complaints or concerns from the neighbors. The inspection determined the facility operated in compliance with federal and state regulatory requirements.

NAME th DATE 9/5/2019 SUPERVISOR IK