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MAR 22DEPARTMENT OF ENVIRONMENTAL QUALITY  
AIR QUALITY DIVISION  
ACTIVITY REPORT: On-site Inspection

A808773515

FACILITY: ARTED CHROME PLATING INC	SRN / ID: A8087
LOCATION: 38 PIQUETTE, DETROIT	DISTRICT: Detroit
CITY: DETROIT	COUNTY: WAYNE
CONTACT: Mark Borawski , Manager	ACTIVITY DATE: 08/20/2024
STAFF: Terseer Hemben	COMPLIANCE STATUS: Compliance
SUBJECT: Hard Chrome Plating	SOURCE CLASS: MINOR
RESOLVED COMPLAINTS:	

ARTED CHROME PLATING INC.

INSPECTOR: Terseer Hemben EGLE-AQD

PRESENT: Mark Borawski

Date of Inspection: August 20, 2024

SRN: A8087

Address: 38 Piquette Street, Detroit, MI

48202

Regulatory Rules: Federal-40 CFR 63, Subpart A &amp;N

State: R 336.1201; R 336.1941; R 336.1901

FACILITY BACKGROUND: ARTED CHROME PLATING, INC.

The Arted Chrome Plating, Inc. is owned by Ronald and Frank Borawski. The main business line at this facility is the decorative nickel/chrome plating operation regulated under 40 CFR 63, Subparts A & N (the National Emission Standards for Chromium Emissions from Hard and Decorative Chromium Electroplating and Chromium Anodizing Tanks or MACT N). The process currently operates one open surface chromium electroplating tank: EUCHROMETANK1-a decorative chrome electroplating tank with fume suppressant control; also referred to as hexavalent chrome tank.

The facility was last inspected in 2019. EUCHROMETANK1 that processed hexavalent chrome was determined to be in compliance with the MACT N, of AQD Administrative Rule 941(1), which required compliance with MACT N, and with the special conditions (SCs) of Permit to Install (PTI) No. 74-02A.

On May 16, 2017, the facility entered Consent Order AQD No. 11-2017 to resolve violations. The Consent Order required the facility to comply with the maximum surface tension limit within 40 CFR 63.342(d)(3) and to comply with SCs VI.1 and VI.3 of PTI 74-02A for EUCHROMETANK1.

EUCHROMETANK2 was not in use. Detailed information regarding the consent order is on AQD file.

## INSPECTION NARRATIVE:

I arrived at the facility location, 38 Piquette Street, Detroit, MI 48202 on August 20, 2024 at 1455 hours. The purpose of visit was to perform a scheduled compliance inspection for emission compliance with rules regulating decorative chrome plating. Temperature at the hour was 73 F, and wind speed 3 mph coming from the SW. Humidity was 35%. I was admitted into the building by Mr. Borawski. We held a pre-inspection communication and proceeded to inspect the facility chromium electroplating operation: There has been no change to the process and equipment at the facility. Only the EUCHROMETANK1 (hexavalent chrome) was in operation. The company uses ethoxylated coconut oil alkyl amine of grade 20-30% by weight to maintain the surface tension limit in the chrome plating tank. There was minimum activity at the facility both inside and outside. I left the area at 1535 hours.

## COMPLAINT/COMPLIANCE HISTORY:

Arted Chrome Plating, Inc. has not been a source of citizen air quality complaints.

**OUTSTANDING CONSENT ORDERS:**

The Consent Order AQD No. 11-2017 is still active.

**OUTSTANDING VNs:**

None

**OPERATING SCHEDULE/PRODUCTION RATE:**

The facility operates a regular 8-hour shift from 6:00 am to 2:00 pm. occasionally, the facility may run an evening shift if workload demands such considerations. The manager informed the facility had no jobs at hand to run the electroplating process through extended hours.

**PROCESS DESCRIPTION:**

Arted Chrome Plating facility operates decorative chrome/nickel business as the main business line. The main service products are bolts, acorn nuts for auto industries, and Harley Davidson motorcycle parts. Operation processes are arranged in rows of baths lined in an open room. The floor plan of the process is in AQD files. The main pollutant emission activities in, and around, the acid tank is controlled with a fume suppressant, referred to as wetting agent. The chromium plating process deposits a relatively a thick layer of chromium directly on the base of the metal to provide a surface with wear resistance. Chrome plating process makes the surface to bear a low coefficient of friction, hardness, and corrosion resistance or to build up surfaces that have eroded over time. Hard plating is used for items such as hydraulic cylinders and rods, industrial rolls, plastic molds, engine components and marine hardware.

Process operations comprise a Decorative Chromium Electroplating (DCE) process. The DCE of metals and plastics is performed in one tank. The dimensions of this tank are 56 inches in height, 44 inches wide, and 130 inches in length. Chromic acid mist generated due to operation of the plating tank is exhausted to the ambient air via lip exhaust. The lip exhaust captures chromic acid mist and exhaust to the ambient air through a circular stack. Details regarding the exhaust stack serving the DCE tank are found in AQD files. Chromium emissions that arise from operation of the DCE tank are controlled by adding a chemical suppressant (ethoxylated coconut oil alkyl amine) to the plating bath. Plating time allowed for chrome plating is 2 min.

The AQD permitted the process under Permit to Install No. 74-02A stipulating regulatory conditions for ensuring compliance for the decorative chromium electroplating tank and nickel stripping tank (EUCHROMETANK1). The permit was modified in 2010 to PTI No. 74-02A to add a trivalent chromium tank. The plating tanks are raised on a platform in such a position that drips of chromium solution to the floor are captured and sent to wastewater treatment stream. Chromic acid mists inside the building are discharged into the stack's 4 strategically placed hoods. The facility discontinued the operation of trivalent chrome in EUCHROMETANK2.

**APPLICABLE RULES/PERMITS PTI# 74-02A CONDITIONS:****EUCHROMETANK1 – Hexavalent Chrome Tank with Fume Suppressant/Wetting Agent Added**

1. SC I.1: The total chromium emission in EUCHROMETANK1 was maintained at 0.00018 pph. The emission is maintained through addition of a chemical fume suppressant in quantities and frequency for ensuring the surface tension of the electroplating solution does not exceed 40 dynes/cm as measured by stalagmometer. The permit limit was set as a MACT N standard for surface tension. Records attached indicate the highest surface tension measurements so far this year was 36.12 dynes/cm (observed on April 24, 2024 and July 17, 2024, as measured by the stalagmometer).

2. SC. III.1: ACPI applied fume suppressant during operations of EUCHROMETANK1 in quantities and at a frequency to ensure the surface tension of EUCHROMETANK1 did not exceed 40 dynes/cm at any time during operation. Records attached showed compliance with frequent addition and corresponding values of surface tension of the plating solution. The highest surface tension measurements so far this year was 36.12 dynes/cm, and occurred in the months of May 2024 and July 2024, as measured by the stalagmometer [Attachment pgs. 2-3].

3. SC. VI.1: ACPI is required to monitor the surface tension of EUCHROMETANK1 every four hours of operation for the past 12 months, except as allowed in 40 CFR 63.343(c)(5). The condition required the operator to monitor surface tension of the tank every four hours if the surface tension exceeded 40 dynes/dscm. ACPI made measurements in 2016 when the surface tension exceeded limit, and corrections made thereafter allowed the facility to extend the four-hour frequency of measurements as allowed pursuant to 40 CFR 63.343(c)(5). ACPI measures the surface tension every 40 hours of tank operation [Attachment pgs. 2-3].

4. SC. VI.2: ACPI monitored chromium emissions, operating, and maintenance information in accordance with the National Emission Standards for Hazardous Air Pollutants as specified in 40 CFR Part 63 Subparts A and N. Compliance was indicated in accordance with the data attached [Attachment Pgs. 2-9].

5. SC. VI.3: ACPI maintained the work practice standard of operations as listed in the attachment titled ACPI. Mr. Borawski logged the operation procedures for EUCHROMETANK1 as observed and presented in the attachment. Data submitted showed no deviations or deficiencies and no corrections made to the process. [Attachment Pgs. 4-9]. The recordkeeping met compliance.

6. SC. VI.4: ACPI recorded the surface tension measurements of EUCHROMETANK1 including the amount of chemical fume suppressant added to EUCHROMETANK1 and the date and time of each addition. The records were kept on file for a period of five years and made available to the Department upon request. Records covering the last 12 months were extracted from the database and attached [Attachment Pgs. 2-3]

7. SC. VIII.1: The stack/vent dimensions appeared unmodified, and exhaust gases from stacks listed in SC. VIII.1 were discharged unobstructed vertically upwards to the ambient air. Visual inspections confirmed no change in stack configuration were made.

#### **EUCHROMETANK2 – Trivalent Chrome Tank with Fume Suppressant/Wetting Agent Added**

8. SC. III.1: Not Applicable-ACPI no longer operates EUCHROMETANK2.

9. SC. VII.3: Not applicable - ACPI does not use scrubber.

10. SC. VIII.1: Visual inspection indicated the stacks configurations were not altered. Stack was not in use at the time of inspection.

#### **Regulatory Discussions**

Rule 201(1): There was no change in the process.

MACT N and Rule 941: The ACPI operated consistent with the MACT N and SIP Rule 941 requirements laid for chrome emission limits and work practice standards. Chrome emission limits met compliance. Records indicated applicable work practices and standards were adequately observed.

Rectifier rating: The total rectifier amperage per year required to operate the open surface chromium electroplating tanks was estimated to 34,470 amps per the reporting year. ACPI remains a minor source operation.

Pursuant to 40 CFR 63.342(d)(4), after September 21, 2015 the facility was prohibited from adding PFOS-based fume suppressants to the chrome tanks. A perfluorooctane sulfonic acid (PFOS)-based fume suppressant is defined by MACT N as a fume suppressant that contains 1 percent or greater PFOS by weight. The ACPI submitted to use of wetting agent as fume suppressant called ethoxylated coconut oil alkyl amine for the hexavalent chrome (Literature is on AQD file). The coconut oil-based suppressant SDS indicated PFOS - free.

PFAS/PFOS: ACPI installed and currently operates a carbon filter for water purification for purposeful removal of PFOS traces from water streams. Water used at the facility is treated using the carbon filter before discharge into the city of Detroit wastewater stream. .

Rule 301: There was no dust or particulate matter emissions observed at the facility during the inspection.

**Rule 901:** There was no nuisance at the facility environment or complaint 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 Arted Chrome Plating Inc. determined that facility operated in compliance with PTI No. 74-02A and MACT N. By complying with maximum surface tension limit within 40 CFR 63.342(d)(3) and by complying with SCs VI.1 and VI.3 of PTI 74-02A for EUCHROMETANK1, the facility is in compliance with the consent order requirements. The facility's fume suppressant did not show presence of PFOS content.

NAME

flr

DATE

9/30/24

SUPERVISOR

JK