

N6697
MHWLA

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

N669733252

FACILITY: INTERNATIONAL HARDCOAT INC		SRN / ID: N6697
LOCATION: 12400 BURT, DETROIT		DISTRICT: Detroit
CITY: DETROIT		COUNTY: WAYNE
CONTACT: Terry Van Dien , VP Operations/Director		ACTIVITY DATE: 01/27/2016
STAFF: Terseer Hemben	COMPLIANCE STATUS: Compliance	SOURCE CLASS: MINOR
SUBJECT: Aluminum Anodizing		
RESOLVED COMPLAINTS:		

International Hardcoat, Inc.

INSPECTOR: Terseer Hemben (DEQ)

PRESENT: Terry Van Dien (Director of Operations)

Date of Inspection: January 27, 2016

SRN: N6697

Address: 12400 Burt, Detroit, MI 48228

Regulatory Rules: Federal-40 CFR 63, Subparts A & N State: R 336.1201 & (6); General Condition 13; R336.1224; R 336.1910; R 336.1941; R 336.1901.

FACILITY BACKGROUND:

The International Hardcoat Inc. (IHC) operates an anodizing coating process at the 12400 Burt, Detroit, Michigan. Fundamentally, the anodizing process involves passing an electrical current through a bath containing acidic solution to cause deposition of chromium metal on the surface composition of a metal that serves as anode. This process alters physical characteristics of the coated metal. For example, an Aluminum metal or alloy that has been anodized gains an aluminum hydride surface that becomes non-conducting and corrosion resistant. Thus anodic coating generates wear resistant property. A hardcoat process is an anodizing that results into a buildup of surface material with thicker and heavier coating. Technically, IHC uses an emulsifying, borated alkaline cleaner to remove machining oils during a hardcoating process. The borated alkaline cleaning is achieved using buffing compounds. The process is followed by a sodium hydroxide etch solution treatment to produce an aluminum surface with a flat matte finish. A deoxidizer is used to finalize the finish process. The pre-treated aluminum is taken to the anodizing or hardcoating tank. Sulfuric acid is added as a catalyst in anodizing tanks with temperature controls for regulating overheating. After aluminum has been anodized or hardcoated, the pores of the anodic coating are closed or sealed or hydrated using hot water, a Sodium Dichromate solution, or a Nickel Acetate solution depending on the needs of the customers or military specifications for finish. For products that require color finish the aluminum part is submerged in a dye solution before the anodic pores are closed. The poles in the aluminum surface seal to lock in the color. The Aluminum and proposed nickel anodizing process were permitted under PTI# 193-03; C-11413 through C-11417.

INSPECTION NARRATIVE:

I arrived at the facility location, 12400 Burt, Detroit, MI 48228 on January 27, 2016 at 1000 hours. The purpose of visit was to perform a scheduled compliance inspection for evaluation of compliance with rules regulating decorative chrome plating. Temperature at the hour was 32 F, and wind speed 8.1 mph coming from the West. Humidity was 79%. I was admitted into the building by Mr. Terry Van Dien, the Director of Quality and Technology. We held a pre-inspection conference and went over the inspection agenda items. Mr. Dien informed the facility had discontinued and uninstalled the Chromic acid anodizing process. The Nickel anodizing line was not installed. The scrubber used for cleaning emissions from the Chromic Acid Anodizing unit was operational and in use in the aluminum

anodizing process. The equipment supported Sulfuric Acid anodizing process in containing emissions. Practically, fumes generated from the sulfuric acid anodizing step and associated emissions were discharged inside the work area. Mr. Van Dien and the AQD Inspector checked the gages installed for measuring flow rates to the scrubber, and associated pressure drops. Records from monitoring activities are logged as attachments B, C, D, E, F, and G. All other equipment supporting the emission units that were out of service were removed from the site. We walked through the process and production areas to the two boilers at the site. The two Cleaver Brooks boilers had the same rating plate 125-150 HP each; and were installed in 1996. Natural gas is used for firing the boilers at rate 6,280,000 BTU/hr. qualifying the equipment for exempt under rule 282(b)(i). The name plate was prominently displayed. Exhaust gases from the boilers are routed through the overhead heat exchanger for heat recovery. Recovered heat is used to heat the anodizing tank. Heat evolved from anodizing process is recovered and used for preheating the natural gas flowing into the boiler burners. The boilers are synchronized. One boiler idles on low circulation when the second boiler runs at loaded capacity. There was no change or modification to the utility equipment. The process exchanged air flow with the ambient through steam venting stacks system. Mr. Dien and AQD Inspector returned to the office for post inspection conference. Terry Van Dien informed he had mailed a letter to the AQD office requesting the void of permit# 4-99 for the chromic acid anodizing process. The facility runs a 2 and ½ shift schedule; sometimes 3, with 140 full time staff and 25-40 temporary employees. It was noted that Permit # 193-03 has been active but remains inconsequential because the nickel anodizing line has not been installed since permitted. I left the area at 1200 hours.

COMPLAINT/COMPLIANCE HISTORY:

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

OUTSTANDING CONSENT ORDERS: None

OUTSTANDING LOV'S:

None

OPERATING SCHEDULE/PRODUCTION RATE:

The facility operates a 2 and ½ - and sometimes 3 shifts depending on production load.

PROCESS DESCRIPTION:

The IHC facility was permitted initially to process decorative chrome/nickel anodizing operations as the main business line. The service products include bolts, nuts for auto industries, and miscellaneous products. Other products include grinders, valve heads, wire racks, etc. Anodizing processes are arranged in rows of baths closely arranged for heat exchange and minimization of chemical drips during parts transfer from bath to bath. The floor plan for the process is in AQD files.

EQUIPMENT AND PROCESS CONTROLS:

The initial equipment used for the process was installed in 1999. The equipment was permitted by Wayne County under permits# C-11413 through C-11417. The permits cover plating tanks and associated add-on control equipment such as absorbers (Scrubber). The DEQ-AQD permitted later processes added to the initial ones under permit# 4-99. Following the decommissioning of chromic acid anodizing processes, the add-on control (Scrubber) was retained and maintained for the support of remaining active processes. Permit # 193-03 issued in 2003 authorizing nickel anodizing installation and operation remains valid, however the process is yet to be installed.

APPLICABLE RULES/PERMITS WC C-11413 through C-11417 & NESHAP CONDITIONS:

Based on the federal rule and Wayne County permit conditions, the operations of International Hardcoat facility was evaluated. This inspection hinged on Rules R 336.1201; R336.1224, R336.1225, R 336.1901;

R336.1910; Permit C-11413 through C-11417; Absorber; Permit# 4-99. The inspection evaluated the performance of IHC as:

1. In compliance-IHC stated there had not been any modification to any system or process at the IHC facility in the last 24 months. Response from IHC affirmed the assessment (Rule 201(1)) [Response#1, Record A, Pg. 1].
2. In compliance – IHC estimated the amount of Sulfuric acid emissions from Anodizing and hardcoating tanks did not exceed 0.0108 pounds per hour; 110 lbs. per year or 0.05 tons per year based upon a 12-month rolling average as determined at the end of each calendar month [SC 17]. Response from the IHC emission estimates were based on engineering estimates provided by the manufacturer of the scrubber. The permit did not require maintenance of records of actual discharge measurements from the anodize/hard anodize processes in special conditions. AQD accepted this estimation [Attachment A, Pg. 1, Item# 2].
3. In compliance- IHC demonstrated the scrubber permitted under Permit C-11413 through C-11417 was installed and operating properly. A visual inspection of scrubber that was used to strip in-door air drawn from the anodizing tank operation indicated the pressure drop on the scrubber gauge was 0.9 inches of water [SC 18].
4. In compliance – IHC did not need to demonstrate the permittee verified emissions from anodizing and hardcoating operations by testing at owner's expense, in accordance with Division's requirements, which required approval. Note that verification of emission rates includes a submittal of a complete report of test results. If stack testing was required, stack testing procedures and the location of stack testing ports had prior approval from the District Supervisor, and results were submitted within 120 days of the written requirement for the verification. [SC. 19]. Response from IHC indicated the AQD did not request for stack testing [Attachment A, Pg. 1, item#3].
5. In compliance – IHC stated the exhaust gases from the anodizing and hardcoating operations were discharged unobstructed vertically upward to the ambient air from various stacks with maximum diameters of 48 inches at exit points of not less than 25 feet above ground level [SC 20]. Response from IHC stated the system was installed according to approved permit specification and had not been modified since installation was completed [Attachment A, Response # 4, Pg. 2].
6. In compliance - IHC estimated the visible emissions from anodizing and hardcoating operations did not exceed zero opacity [SC 21]. Response from IHC stated no request to monitor opacity was issued by the DEQ-AQD or Wayne County permits. However, visual observations by IHC maintenance technicians indicated there was no visible opacity [Attachment A, Response# 5, Pg. 2]
- 7 The requirements of NESHAP 40 CFR 63, Subpart A and N and Rule 901 [SC 10] were no longer valid since the chrome process installed pursuant to PTI 4-99, Wayne County permit C-11677, 40 CFR 63, Subpart N had been removed. The equipment was out of service. .

DISCUSSIONS:

The requirements stipulated by Title 40, part 63, Subpart N of the code of Federal Regulations (40 CFR 63, Subpart N) as applied to the IHC were investigated. However, the conditions did not apply because the process was out of service or not installed. The IHC observed the Michigan Rule 336.1910 with respect to Air pollution control equipment operation and maintenance. However, since the equipment was either out of service or not installed, control devices were not necessary. The rule conditions did not apply.

The IHC operates the anodizing business at design capacity. The process emissions were discharged inside the building. There were no other vents to the building except through the steam stacks and ventilation ducts. Therefore, all volatile compounds generated in the process such as sulfuric acid vapors were discharged inside the building.

PERMIT VOID

The following permits are void due to discontinuation of chromic acid process, and the non-installation of the nickel process: C-11677, PTI # 4-99, PTI # 193-03, PTI # 478-97.

APPLICABLE FUGITIVE DUST CONTROL PLAN CONDITIONS:

This facility does not have nor is in need of a fugitive dust plan.

FINAL COMPLIANCE DETERMINATION:

The inspection of International Hardcoat operation and review of record keeping supported the determination that IHC operated in compliance with C-11413 through C-11417. The facility maintained adequate safety hygiene at the site consistent with WC permits requirements. The facility discontinued the Chromic Acid process and uninstalled equipment designated for the process. The installation of nickel anodizing process was yet to be made. All permits associated with these processes are void.

NAME *fh*

DATE *9/8/2016* SUPERVISOR *JK*