

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

P042930648

FACILITY: Magna Dexsys		SRN / ID: P0429
LOCATION: 5589 W MOUNT HOPE HIGHWAY, LANSING		DISTRICT: Lansing
CITY: LANSING		COUNTY: EATON
CONTACT: Kristen Zielinski , EHS Coordinator		ACTIVITY DATE: 07/23/2015
STAFF: Michelle Luplow	COMPLIANCE STATUS: Compliance	SOURCE CLASS: MAJOR
SUBJECT: Scheduled, unannounced PCE as part of an FCE. This is the first inspection undertaken at Magna DexSys.		
RESOLVED COMPLAINTS:		

Inspected by: Michelle Luplow (author), and Bob Byrnes (Lansing District Office AQD)

Personnel Present: Kristen Zielinski (kristen.zielinski@magna.com), EHS Coordinator  
Gerry Mazzola (gerry.mazzola@magna.com), General Manager  
Sean Guyett (sean.guyett@magna.com), Paint Technical Department Manager

Other Relevant Personnel: John Krocker (john.krocker@magna.com), Environmental Specialist

**Purpose:** Conduct an unannounced, scheduled, partial compliance evaluation (PCE) inspection of Magna DexSys (Delta Exterior Systems). Compliance was determined based on Magna DexSys Permit to Install (PTI) No. 38-13B. This activity was done as part of a full compliance evaluation (FCE).

**Facility Background/Regulatory Overview:** Magna DexSys is an automotive parts supplier. They make automotive front and rear bumpers using mold injection presses and a paint coating line.

PTI No. 38-13 was issued on May 3, 2013 to Magna DexSys (under the name Lansing Division of Norplas Industries) for a plastic parts coating line controlled by an RTO, preheater, and 5 natural gas-fired ovens. The permit contained EUMOLD#1-#4 (mold injection presses), EUPREWASH (a 5-stage parts washer), EUPLASTICCOATING (surface coating operations of plastic automotive front and rear bumpers), EUCLEANUP (cleanup operations throughout the facility), EUSOLVENTTANKS1-2 (solvent storage tanks), EUHWMU (hazardous waste storage), EUDIESELENG (350 kW emergency engine), and EUHEATERS (natural gas-fired hot water heaters, etc). This permit was issued prior to Magna DexSys constructing the building that would house these emission units. A site review of the land prior to issuance of the permit was conducted 3/2013 by Brad Myott. Through the issuance of this permit Magna DexSys also acknowledged that they were a major source of HAPs and consequently subject to the MACT NESHAP PPPP for Surface Coating of Plastic Parts and Products.

On December 19, 2014, PTI No. 38-13A was issued. After constructing the Magna DexSys facility, Magna DexSys applied for this permit modification because upon reaching the final stages of the construction and installing various emission units, the predicted "as-built" design which Magna had originally applied for did not predict the changes that needed to be made during the actual construction and installation of emission units. PTI No. 38-13A added another EUMOLD, removed EUPREWASH and EUHWMU and included it in EUPLASTICCOATING, removed FGCLEANUP, and added EUFINESSE.

A modification to PTI No. 38-13A was issued June 15, 2015 under PTI No. 38-13B. This permit modification included the addition of a fire pump engine (EUFIREPUMPENG), altering some of the emission limits and updating some of the equipment descriptions. This included changing a few conditions in the Design/Equipment Parameters section IV for EUPLASTICCOATING. In PTI 38-13A Magna DexSys was only allowed to use robotic bell disk, electrostatic applicators, or comparable technology with equivalent transfer efficiency for all coating operations in EUPLASTICCOATING. During the April 2015 stack test, S. Guyett showed me that Magna DexSys was using robotic bell disk applicators/electrostatic technology in Zones 1 and 2 (Basecoat 1 and Basecoat 2). The third zone, Basecoat 3, used only a spray gun applicator: the same gun they use for the AdPro, but not electrostatically charged. Magna DexSys was therefore operating out of compliance with PTI 38-13A during the stack test. They explained that the third zone was used to spray paint within cracks, crevices, and hard-to-reach angles that couldn't not be achieved by the robotic bell disks or electrostatically charged spray. I made K. Zielinski aware that this was considered non-compliant operations and told her that if she can get the PTI modification into AQD within 2 weeks of 4/28/15 to get a condition within the permit to allow for a robotic applicator in zone 3 only, I would not send a violation notice. Magna DexSys did so, and the condition is now included in the current permit, PTI No. 38-13B.

Magna DexSys is currently seeking to opt-out of the Title V program. K. Zielinski said that November 3, 2014 was when Magna DexSys started their production as a major source. As required per Rule 210(6), stationary sources that become major sources must submit an administratively complete ROP application within 12 months after the source commences operation as a major source. Magna DexSys has until November 3, 2015 to submit either an opt-out permit or Title V ROP application. Although Magna DexSys may opt-out of Title V, they may still be considered subject to the MACT PPPP under the "once in, always in" policy. If it is determined between the assigned permit engineer and district staff that Magna DexSys would still be subject to MACT PPPP with issuance of the opt-out permit, B. Byrnes explained to K. Zielinski and S. Guyett that if they want to take

control credit, they must install a continuous monitor to their entry and exit points for EUPLASTICCOATING to have a continuous record of the pressure drop at these points. Additionally, if Magna DexSys is determined to be subject to the MACT PPPP after being issued an opt-out permit, they have until November 3, 2015 to submit an initial compliance plan as required by the MACT.

**Inspection:** At approximately 9:20 a.m. on July 23, 2015 Bob Byrnes and I met with Gerry Mazzola, Nicole Zalucki (HR Manager), Kristin Zielinski, and Sean Guyett. I provided K. Zielinski a "Environmental Inspections: Rights and Responsibilities" brochure.

### **EUPLASTICCOATING**

The EUPLASTICCOATING line is used to coat various automobile fascia. The plastic parts are washed, dried off in an oven, cooled down in the cooling tunnel before being coated with an adhesion promoter (AdPro), and Base coats 1, 2 and 3.

The parts washer is a large enclosed section of the line where S. Guyett explained that they use an acidic soap solution (1.5% soap, the remainder of the solution is water) to wash the parts and that it is heated to keep the level of bacteria down. The heat also helps the soap etch into the surface of the part, which helps with adhesion of the coating. The parts move from the injection mold presses to the parts cleaner, then go to the Adpro, clearcoat and basecoat stages of the coating line.

### Process/Operational Restrictions

All waste coatings and solvents are required to be stored in closed containers and disposed of in a manner in compliance with all state rules and federal regulations and any VOC and/or HAP-containing materials should be handled in a way to minimize the generation of fugitive emissions.

S. Guyett showed me that all waste accumulation is in the paint kitchen. There are satellite containers located around the facility for spray cans only. All waste containers within the paint kitchen were closed. S. Guyett explained that in the paint kitchen, paint is distributed by dumping the drums into the appropriate paint containers which are connected to the paint tunnels where the automobile fascia are coated. Transfer of the paint from the drum into the distribution container is done in a manner to minimize fugitive emissions because the connection between the drum and the distribution container seals into place during transfer.

Magna DexSys is also required to have a Malfunction Abatement Plan (MAP) that has been submitted within 180 days of permit issuance (June 19, 2015), and is implemented and maintained. K. Zielinski emailed the MAP to me June 18, 2015 (see attached).

Currently the MAP contains all required information, including an exhaustive list of items to be inspected for the RTO on daily, weekly, monthly and annual bases. The only item that is missing is an identification of all the major replacement parts that are maintained in inventory for quick replacement. I have contacted K. Zielinski to inform her of this deficiency so that at future inspection the MAP contains such information.

### Testing/Sampling

The permit requires that both destruction efficiency of the RTO for EUPLASTICCOATING and the capture efficiency of the non-fugitive enclosure (NFE) be tested. On April 28, 2015, Magna DexSys conducted stack testing of the RTO destruction efficiency, as well as determining if the enclosure for EUPLASTICCOATING would meet the definition of a Permanent Total Enclosure (PTE), rather than the NFE. The copy of the stack test report was received on the day of the inspection, which was roughly 2 months late. A violation notice will not be issued at this time, as AQD now has possession of the stack test report. Tom Gasloli, TPU, has yet to review the report to verify that all results are in compliance with all methodologies. The results in the report show a 95.2% average destruction efficiency at 1500 °F. See the stack test observations report for details on process specs during the test. The RTO chamber temperature was 1501 °F during the inspection. The RTO chamber temperature is continuously monitored and recorded electronically.

The NFE was determined to be a PTE based on the data provided by Air Compliance Testing Inc. Method 204 thus requires that a PTE have an average facial velocity through the NDO of at least 200 fpm, which is equivalent to a pressure drop of -0.007 in H<sub>2</sub>O. During the stack test and during the inspection I verified that pressure drop at the inlet and outlet of the enclosure was less than -0.007. During the inspection, the pressure drop at the entrance of the enclosure was -0.168 in H<sub>2</sub>O and the pressure drop at the exit of the enclosure was -0.032 in H<sub>2</sub>O. S. Guyett said that these pressure drops are checked once per shift. Magna DexSys runs 3 shifts.

Although the permit requires that a capture efficiency test on the NFE be conducted quarterly, it is no longer applicable because the pressure drop readings are sufficient for determining that there is 100% capture. The quarterly test requirement was based only on the assumption that Magna DexSys would use a smoke tube test to determine 100% capture.

### Design/Equipment Parameters

EUPLASTICCOATING is required to have a water wash particulate control system that is properly installed and maintained. S. Guyett said that the water wash system creates a negative pressure in the paint booth to pull the air contaminants down through the floor of the booth into the water trap. He said underneath the water trap is a filter/scrubber system to catch particulate. The scrubber pressure drop is monitored to ensure that it's operating correctly. This pressure reading is also used to make sure the air stream is being pulled toward the RTO. S. Guyett explained that if the water wash system wasn't operating properly, the paint booth would become cloudy with paint particulate would fill the booth and paint the booth window.

Robotic bell disk applicators, electrostatic applicators, or applicators with comparable technology with equivalent transfer efficiency are required on zones 1 and 2 (Basecoat 1 and 2). During the stack test and again during the inspection I verified that the electrostatic bell applicators were being used in zones 1 and 2. Zone 3 is required only to have a robotic applicator, which it does.

#### Monitoring/Recordkeeping

I asked K. Zielinski to provide me with the SDS's for the most-used coatings at Magna DexSys in June 2015. Table 1 contains Magna DexSys' most-used coatings and their VOC, cumene, ethyl benzene, naphthalene, xylenes, and formaldehyde contents, as specified in the SDS. The SDS for Iridium, Limited Addiction, and Switchblade Silver provide VOC content at 0.9 lb/gal. I spoke with K. Zielinski who clarified that the Environmental Data Sheets (EDS) for these compounds provided a more accurate VOC content. The EDS VOC content for each coating, respectively, is 1.12 lb/gal, 1.31 lb/gal, and 1.34 lb/gal, as seen in Table 1. The spreadsheets themselves did not contain the as-applied pollutant content for each coating. Magna DexSys reported VOC content using 95% destruction efficiency/control. I informed K. Zielinski that the content of each pollutant in each coating should also be recorded in their spreadsheets, as required by the permit, without considering the 95% destruction efficiency.

Formaldehyde content in each coating was underestimated in some instances. I determined the formaldehyde content from the melamine resin in Table 1. It was calculated by multiplying the melamine content by 5% and then multiplying the density. These are the values I used to determine formaldehyde emission compliance, as Magna DexSys did not provide a lb/gal formaldehyde content.

Table 1. Coating content

Coating	VOC with water (lb/gal)	Cumene (lb/gal)	Ethyl benzene (lb/gal)	Naphthalene (lb/gal)	Xylenes (lb/gal)	Formaldehyde from Melamine Resin (lb/gal)
AdPro 764-X8409	6.2	0.061	0.36		1.52	
Clear Coat RKAX9277	3.5	0.041	0.008		0.0826	0.062
Clear Activator RK7018	2.5		0.178		0.714	
Abalone White MC	1.3					0.021
Iridium 2561-51711	1.12					0.002
Limited Addiction Red 2561-51706	1.31					0.022
Switchblade Silver 2561-51708	1.34					0.021

Magna DexSys is required to keep monthly and 12-month rolling VOC emission rates. K. Zielinski provided me with spreadsheets for March, April and May 2015 of gallons used for each coating, including the 7 coatings in Table 1. I used the March 2015 gallons used with the coating content data in Table 1 to verify the emissions reported for March 2015 were accurate. Based on my review of these records it appears that the monthly and 12-month rolling emissions data for VOCs were calculated correctly and the emissions are accurate.

Cumene, ethyl benzene, naphthalene, and formaldehyde emissions must also be recorded on a monthly and 12-month rolling basis. I verified the reported emissions rates for these compounds and they appear to be accurate, except for formaldehyde. The permit states that formaldehyde emissions are assumed at 5% of the weight content of the melamine resin in coatings. Magna DexSys has calculated formaldehyde emissions using a 5% formaldehyde content of the melamine resin, but has also included a 30% transfer efficiency in their emissions calculations. I informed K. Zielinski and J. Krockner that a 30% transfer efficiency cannot be considered in calculations unless there have been tests to show that the applicator can only achieve 30%. Additionally, out of the 5 coatings that produce formaldehyde, coating Clear coat RKAX9277 was reported as having a melamine content of 10%, when the range given in the SDS was 5-15%. Magna DexSys should be using the more conservative melamine content, and I informed K. Zielinski of such. Although the formaldehyde emissions have been underestimated, Magna DexSys is well-below the permitted limit of 876 lb/year. If the 30% transfer efficiency is removed from the calculations, the total formaldehyde emissions for the year, up through June 2015 would only be 96.2 lbs.

Xylenes have permit limits on a daily basis. I asked K. Zielinski to provide me with one month of daily xylenes emissions. For the month of July 2015 the day with the largest xylenes emissions was July 7, 2015 at 17.69 lbs. These emissions are reported taking into account destruction efficiency. The daily limit is 108.0 lbs. Magna DexSys is in compliance with their xylenes limit at this time.

See Table 2 for the actual emissions vs permitted limits for each coating. The 12-month rolling contains less than 12 months of data because production did not start until November 2014.

Table 2.

Pollutant	Actual Emissions (Nov '14 – June '15)	Permitted Limit	Compliance Status

VOC	7.18 tons/12-month rolling	59.1 tons/12-month rolling	Compliance
Cumene	86.42 lb/12-month rolling	744.6 lb/12-month rolling	Compliance
Ethyl benzene	259.22 lb/12-month rolling	10,792.3 lb/12-month rolling	Compliance
Naphthalene	0.81 lb/12-month rolling	1,033.7 lb/12-month rolling	Compliance
Formaldehyde	96.2 lb/12-month rolling.	876.0 lb/12-month rolling	Compliance

Magna DexSys is also required to keep record of the temperature in the RTO combustion chamber in equally-spaced intervals not to exceed 15 min/interval. K. Zielinski provided me with May and June 2015 RTO chamber temperatures on a weekly basis. All weeks had adequate records to show that the RTO was maintained at 1500F during production. All weeks show graphically that the RTO was maintained around 1500F. I will speak to K. Zielinski and ask that a notation for the exact temperature the graphs are illustrating.

Magna DexSys is in compliance with all requirements for EUPLASTICCOATING at this time.

#### **EUFINESSE**

Magna DexSys uses hand-held sanders, buffing pads, and a solution of isopropyl alcohol (IPA) (20%) and water (80%) to repair defects in painted plastic parts. The IPA solution is specifically used for removing the residue from the sanding cream. All containers of IPA were closed during the inspection, as required by the permit. Each time an employee fills a container with the IPA solution they note it on a sheet of paper near the finesse stations. Magna DexSys is limited to 2 tons of VOC per 12-month rolling time period. K. Zielinski provided me with the 12-month rolling summary and a June 2015 record showing that Magna DexSys used 7.5 gallons of solution containing 20% IPA, equivalent to 9.9 lbs of VOC for June. The 12-month rolling total of VOC was 0.04 tons.

Magna DexSys is in compliance with all requirements for EUFINESSE at this time.

#### **EUDIESTELENG**

This engine is a Generac 130 kW (198 hp) emergency diesel engine that was first started up in June 2014. I have copies of photos from the nameplate of the generator that S. Guyett provided. I verified the engine/generator model was an SDO130, with serial number 8624627, and 130 kW.

Magna DexSys is permitted only to use diesel fuel with a maximum sulfur content of 15 ppm (0.0015%) and a minimum Cetane index of 40. K. Zielinski showed me their Marathon documentation that their fuel is ultra-low sulfur (15 ppm) and that the fuel's Cetane index is a minimum of 40.

The NSPS allows Magna DexSys to operate this engine for up to 50 hours of non-emergency situations per calendar year that do not involve maintenance and readiness testing, and a 100 hours for maintenance and readiness testing, which includes the 50 hours for non-emergency, non-maintenance activities. For 2015, Magna DexSys has operated the engine for a total of 20.7 hours to conduct their annual service and testing of the diesel fuel per manufacturer's recommendations and for maintenance to ensure it is working properly. Magna DexSys showed me the nonresettable hours meter installed on the generator, which is required by the permit.

The Generac is a certified engine per the documentation K. Zielinski sent me (and attached), which is effective as of 5/20/2013, but has an expiration date of 12/31/2014. I will have future conversation with K. Zielinski to verify that this engine is still considered certified by the EPA, and can be maintained according to the manufacturer's emission-related instructions. Currently Magna DexSys maintains the engine per manufacturer's instructions.

Magna DexSys is in compliance with all requirements in EUDIESTELENG at this time.

#### **EUFIREPUMPENG**

I verified with the generator's nameplate (see photo attached) that is generator is rated at 180 kW output. The permit allow no more than 190 kW output.

Magna DexSys is permitted only to use diesel fuel with a maximum sulfur content of 15 ppm (0.0015%) and a minimum Cetane index of 40. K. Zielinski showed me their Marathon documentation that their fuel is ultra-low sulfur (15 ppm) and that the fuel's Cetane index is a minimum of 40.

The NSPS allows Magna DexSys to operate this engine for up to 50 hours of non-emergency situations per calendar year that do not involve maintenance and readiness testing, and a 100 hours for maintenance and readiness testing, which includes the 50 hours for non-emergency, non-maintenance activities. For 2015, Magna DexSys has operated the fire pump engine for a total of 22.7 hours to maintain weekly fire pump testing. The pump is used to increase water pressure in the event of a fire because the pressure from the city lines alone is not enough. Magna DexSys showed me the nonresettable hours meter installed on the generator, which is required by the permit.

K. Zielinski provided me with a certification from the manufacturer, Deutz, showing that the engine has been certified, which means that Magna DexSys is allowed to maintain the engines per the manufacturer's instructions rather than creating their own maintenance plan.

Magna DexSys is in compliance with all requirements in EUFIREPUMPENG at this time.

**FGMOLDING**

The injection mold presses (EUMOLD#1 - #5) in this flexible group are used to mold the automotive front and rear bumpers.

Magna DexSys uses hand-held aerosol spray cans to apply mold release to the front and rear bumper molds. K. Zielinski said that they've used 84 cans since March 2014 with an average use of 8 cans per month. The 12-month rolling VOC tpy total K. Zielinski provided was 0.34 tons as of July 2015. The limit is 0.6 tpy.

Magna DexSys is in compliance with all requirements in FGMOLDING at this time.

**FGNATURALGAS**

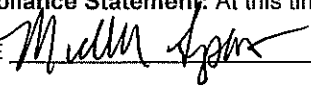
This unit contains the emission units EUPLASTICCOATING and EUHEATERS.

Magna DexSys is required to have a device to monitor and record the natural gas usage for FGNATURALGAS on a continuous basis. Before the permit was issued Magna DexSys had conversation with me about what would be an approved monitoring device. The agreement was made that Magna DexSys could provide AQD with Consumer's Energy billing statements to show how much natural gas they've used because Consumer's Energy is the entity responsible for recording this usage.

K. Zielinski provided me with their bill showing usage from August 2014 – July 2015. Magna DexSys has a limit of 573 MMcf per 12-month rolling time period. For August 2014 – July 2015, the total MMcf was 99462 Mcf, equating to 99.46 MMcf.

Magna DexSys is in compliance with all requirements in FGNATURALGAS at this time.

**Compliance Statement:** At this time Magna DexSys is in compliance with all state and federal rules and regulations.

NAME 

DATE 9-26-15

SUPERVISOR 

