

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

N315045560

FACILITY: APX INTERNATIONAL		SRN / ID: N3150
LOCATION: 30800 STEPHENSON HWY, MADISON HTS		DISTRICT: Southeast Michigan
CITY: MADISON HTS		COUNTY: OAKLAND
CONTACT:		ACTIVITY DATE: 07/24/2018
STAFF: Kerry Kelly	COMPLIANCE STATUS: Compliance	SOURCE CLASS: MINOR
SUBJECT:		
RESOLVED COMPLAINTS:		

On July 24 2018, I (Kerry Kelly, MDEQ-AQD), conducted a targeted inspection at Sika Corporation located at 30750 and 30800 Stephenson Highway in Madison Heights, Michigan. The purpose of the inspection was to verify facility's compliance with requirements of Article II, Air Pollution Control, Part 55 of Act 451 of 1994 and Permits to Installs (PTI) numbers 513-94 and 512-94.

FACILITY REGULATORY HISTORY

PTI numbers 513-94 and 512-94 were issued to APX International in December 1994 for paint booths and associated ovens at 30800 and 30750 Stephenson Highway in Madison Heights.

INSPECTION

I arrived at 30800 Stephenson Highway, Madison Heights at about 8:15 AM. When I arrived, I noted that both 30800 Stephenson and 30750 Stephenson were both operated by Sika Corporation. I entered the office, introduced myself, showed my photo credentials, and explained the purpose of my visit to the receptionist. The receptionist introduced me to Mr. David Yeskey, Maintenance Manager for Sika. I explained the purpose of my visit to Mr. Yeskey. Mr. Yeskey informed me that Sika moved into 30800 and 30750 Stephenson in 1998.

Mr. Yeskey explained that Sika performs research and development activities at the Stephenson Highway facilities. The products developed and tested include: sound dampening materials and adhesives for auto manufacturers. According to Mr. Yeskey, there are no spray paint booths at the facility. Two boilers, one in each building, are used for space heating. Mr. Yeskey guided me during my inspection of the equipment and processes in each building.

During the site walk-through I inspected various pieces of equipment and processes used for making test batches of Sika products and performing physical and chemical testing on Sika products. The equipment and processes I inspected at Sika included ovens, humidity chambers, mixers, adhesive applicators, fume hoods, metal-working equipment, and a chassis dynamometer.

30800 Stephenson Highway

Mechanical Testing Systems (MTS) Room

In the MTS room Sika employees test the physical properties of cured and uncured Sika materials. Materials tested in the MTS Room include: epoxy adhesive, rubber adhesive, thermoplastic baffle, and reinforcer. The safety data sheet (SDS) for each of these products are attached (Attachment 1). Based on the SDSs, the reinforcer has the highest volatile organic compound (VOC) content at approximately 0.3 lb/gallon.

In the MTS Room I observed a Zwick/Roell machine used for strength testing products. The emissions from this machine are vented to a cartridge filter. According to Ms. Beth Nix, Sika, Research Technician, the emissions from the Zwick/Roell machine are vented to the filter because sometimes the product being tested is on a corroded part and the corroded part generates particulate. In addition to the Zwick/Roell machine, there is a Rheometer MDR 2000P machine which is used to test the cure state of plastic sound- dampening baffles. Sika's sound dampening baffles are heat-reactive thermoplastic or elastomeric parts designed to seal an auto body. According to the SDS for the baffles, there are "no ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment" and "not applicable" for VOC content. The equipment in the MTS room appears to be exempt from the requirement to obtain a permit to install per R 336.1283(2)(a)(ii).

Environmental Room

There are 4 electrically heated humidity chambers in the Environmental Room. The humidity chambers in the Environmental Room do not appear to emit any air pollutant regulated by title I of the clean air act and its associated rules, including 40 C.F.R. §51.165 and §51.166, adopted by reference in R 336.1902, or any air contaminant.

Mixing and Pilot Room

In the Mixing and Pilot Rooms there are several small mixers used to mix rubber-based sealants and adhesives. According to Sika Vice Presidents Mr. Phil Weber and Ms. Leslie Wolschleger, the mixers are used to mix one-pound batches of epoxy adhesive, rubber adhesive, thermoplastic baffle, and reinforcer which will then be used for research and testing. Based on the SDSs for the epoxy adhesive, rubber adhesive, thermoplastic baffle, and reinforcer; the reinforcer has the highest volatile organic compound (VOC) content at approximately 0.3 lb/gallon. The production of small batches of product is done at the Madison Heights research facility to avoid disrupting the process at the Sika production facility in Kansas. The mixing equipment in the Mixing and Pilot Rooms appears to be exempt from the requirement to obtain a permit to install per R 336.1283(2)(a)(v).

In addition to the mixers, I inspected an injection mold machine, a self-contained sand blast unit, an electric oven, a low temperature refrigerator, two humidity chambers, a cleaning process, and a 3-roll roller in the Pilot Room.

The injection mold machine in the Pilot Room appears to be exempt from the requirement to obtain a permit to install per R 336.1286(2)(e). The sandblast unit appears to be exempt from the requirement to obtain a permit to install per R 336.1285(2)(l)(6).

The electric oven in the Pilot Room is used to heat baffles and peels to approximately 160 degrees Fahrenheit. Emissions from the oven are released to the general in-plant environment. According to the SDS for the baffles, there are "no ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment" and "not applicable" for VOC content. This oven appears to be exempt from the requirement to obtain a permit to install per R 336.1283(2)(a)(v).

Emissions from the 3-roll roller are released to the general in-plant environment. Mr. Yeskey indicated that the 3-roll roller hasn't been used recently. The 3-roll roller appears to be exempt from the requirement to obtain a permit to install per R 336.1283(2)(a)(ii).

When I entered the Pilot Room I observed the Chemist, Ms. Michelle Climie, Sika, wiping the inside of an approximately one gallon, metal container with a rag. Ms. Climie explained she was cleaning the inside of a used container that previously contained epoxy residue. Ms. Climie gave me a copy of the SDS for the cleaning product (Attachment 2). The SDS for this product states that it is composed of 80-98% glycol ether. Glycol ether is a hazardous air pollutant. Glycol ether has an ITSL of 720 µg/m³ and no IRSL or SRSL. Ms. Wolschleger sent a copy of emissions from the wiping process for June and July 2018 (Attachment 3). According to Ms. Wolschleger, the cleaning product was first brought on site June 1, 2018. The reported VOC emissions for the cleaning process are 0.681 lbs for a two month period. The cleaning process appears to be exempt from the requirement to obtain a permit to install per R 336.1290(2)(i) because the uncontrolled VOC emissions are less than 1,000 lbs/month.

Shipping Area

After leaving the Pilot Process area, I inspected equipment in the shipping/receiving area. In the shipping/receiving area I observed a cartridge filter, an oil temperature controller, and a boiler.

The cartridge filter serves the MTS, Mixing and Environmental rooms. I did not see any dust/particulate on or around the filter. It appears the filter is being operated properly.

The oil heater was completely enclosed and I did not see any emissions from this equipment. The 1.0 MMBtu/hour, natural gas-fired, Weil Mclain boiler in this building appears to be exempt from the requirement to obtain a permit to install per R 336.1282(2)(b) and not subject to 40 CFR 60 Subpart Dc because the heat input capacity is less than 10 MMBtu/hour.

The last rooms I inspected inside the 30800 Stephenson building were the Oven Room and the Bench Lab.

In the Oven Room there are six electric ovens, two natural gas-fired Despatch ovens, two saws, and fume hood.

According to Ms. Wolschleger, the ovens are used to heat cured epoxy adhesive, rubber adhesive, thermoplastic baffle, and reinforcer. Based on the SDSs for these products; the reinforcer has the highest volatile organic compound (VOC) content at approximately 0.3 lb/gallon. Each of the Despatch natural gas-fired ovens have a heat input capacity of 50 MMBtu/hour and are typically heated to approximately 250 degrees Fahrenheit. Emissions from the natural gas-fired ovens are released to the ambient air. The ovens appear to be exempt from the requirement to obtain a permit to install per R 336.1283(2)(a)(ii).

According to Mr. Weber, the hood in the oven room is used to conduct burn testing of 30 gram samples of products. The hood appears to be exempt from the requirement to obtain a permit to install per R 336.1283(2)(ii).

The saws in the Oven Room appear to be exempt from the requirement to obtain a permit to install per R 336.1285(2)(l)(6) because they are used on a non-production basis and are vented to the general in-plant environment.

The Bench Lab contained lab tables. I didn't observe any processes or equipment in the Bench Lab during the inspection. According to Mr. Weber, cured samples are tested for density and water absorption in the Bench Lab. Processes and equipment in the Bench Lab appear to be exempt from the requirement to obtain a permit to install per R 336.1283(2)(a)(ii).

In addition to the aforementioned areas of 30800 Stephenson Highway, I also inspected the area that the application for PTI 513-94 stated the paint booths were. This area is now a conference room/training area. I did not see any paint booths in the building with address 30800 Stephenson Highway. I will request PTI 513-94 be voided since the permitted equipment is no longer at the facility.

30750 Stephenson Highway

Savard Bake Oven

We began the walk-through of 30750 Stephenson Highway by inspecting a Savard bake oven. The Savard oven is a 2.0 MMBtu/hour, natural gas-fired oven used to heat foam on assembled vehicle bodies. This oven appears to be exempt from the requirement to obtain a permit to install per R 336.1283(2)(a)(iii).

Material Application Area

I inspected two 5 gallon heated mixers that contained pumps to supply epoxy, urethane, and acrylic products to one of three dosing applicators. The product drums in the mixers were covered during the inspection. According to Mr. Jeff Woodward, Director of Technical Services & Systems Engineering, the tests conducted with the pumps are done to assess the application characteristics (e.g. measuring pressures and flow rates to understand key dispensing properties). Mr. Woodward provided SDSs for examples of the epoxy, urethane, and acrylic products tested in the application area (Attachment 4). Based on the SDSs for these products; the acrylic has the highest VOC content at approximately 0.43 lb/gallon. Mr. Woodward estimated that approximately 7,200 Liters (1902 gallons) of product are brought in for testing in the application area each year (Attachment 5). Assuming all of the product brought in is acrylic, and is applied, and all the VOCs emitted, the yearly VOC emission would be approximately 818 lbs (0.41 tons). The equipment in the application area appears to be exempt from the requirement to obtain a permit to install per R 336.1283(2)(a)(iii).

Research and Development Lab

I inspected two ventilation hoods and a small oven in the Research and Development Lab.

The fume hoods are used for synthesis – extractions/filtering. These hoods appear to be exempt from the requirement to obtain a permit to install per R 336.1283(2)(b).

A Despatch, natural gas-fired, 500,000 Btu/hour used for foam expansion. The oven in the Research and Development Lab appears to be exempt from the requirement to obtain a permit to install per R 336.1283(2)(a)(v).

The 1.0 MMBtu/hour, natural gas-fired, boiler in this building appears to be exempt from the requirement to obtain a permit to install per R 336.1282(2)(b) and not subject to 40 CFR 60 Subpart Dc because the heat input capacity is less than 10 MMBtu/hour.

Tech Services Lab

In the Tech Services Lab I observed two pumps, one Erdman table, one hot melt roll used to apply adhesives. According to Mr. George Sivy, Chemist, most adhesives are 100% solid waxes. SDSs for the adhesives were provided by Mr. Woodward (Attachment 4). Based on the SDSs for these products; the acrylic has the highest VOC content at approximately 0.43 lb/gallon.

The hot melt roll is vented to the ambient air and is used to apply wax polyurethane adhesives to boards. Mr. Woodward provided the SDS for the urethane adhesive (Attachment 4). According to the SDS the VOC content of the urethane adhesive is 0.104 lb/gallon.

Also in the Tech Services Lab I inspected two ventilation hoods, a UV chamber, and four electric ovens. The electric ovens are used to heat adhesives to approximately 60 – 70 degrees Celcius.

Activator and primer are applied by hand in the Tech Services Lab area, according to Mr. Weber. Mr. Woodward provided SDSs for the activator and primer (Attachment 6), and usage records for each (Attachment 7). According to the SDSs, Aktivator UH-2 LUM had the highest VOC content of these products at 7.58 lb/gallon. The usage records provided indicate the total primer and activator usage combined for 2017 was 1.48 gallons.

The equipment in the Tech Services Lab appears to be exempt from the requirement to obtain a permit to install per R 336.1283(2)(b).

Fabrication Area

I inspected a soldering iron for welding nylon, one Despatch oven, and various pieces of metal working equipment including drills and presses.

Emissions from the nylon welding area are released to the ambient air. This equipment appears to be exempt per R 336.1283(a)(vi)

The oven is a 50,000 Btu/hour, natural gas-fired, Despatch oven used to heat baffle foam. This equipment appears to be exempt per R 336.1283(a)(v).

Emissions from the metal working equipment are released to the general in-plant environment. This oven appears to be exempt from the requirement to obtain a permit to install per R 336.1285(2)(l)(i) and (vi).

Material Lab

I inspected three electrically heated ovens in the Materials Lab. These ovens are used to heat sound-dampening baffles. According to the SDS for the baffles, there are "no ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment" and "not applicable" for VOC content. These ovens appear to be exempt from the requirement to obtain a permit to install per R 336.1285(2)(a)(ii).

Chassis Dynamometer

The one chassis dynamometer I inspected is used to evaluate Sika sound dampening products in-situ. Vehicles that operate in the chassis dynamometer are considered mobile sources (self-propelled vehicles designed for transporting persons or property on a street or highway). The State of Michigan is prohibited to enforce any standard relating to the control of emissions from new motor vehicles or new motor vehicle engines per 42 USC 7543.

In addition to the aforementioned areas of 30750 Stephenson Highway, I also inspected the area where the paint booths, permitted in PTI 512-94, were. Mr. Weber showed me the area and stated the booths were removed when Sika first moved into facility. Above the area Mr. Weber indicated there was a capped hole that appeared to be where a paint stack was. I did not see any paint booths in the building with address 30750 Stephenson

Highway. I will request PTI 512-94 be voided since the permitted equipment is no longer at the facility.

CONCLUSION

Based on the field inspection it appears the paint booths and ovens permitted in PTI 512-94 and 513-94 have been removed. I sent a request to AQD permit section asking them to void PTI 512-94 and 513-94 because the permitted equipment is no longer located at 30750 and 30800 Stephenson Highway (Attachment 8). The current processes and equipment at these addresses appear to be in compliance with the requirements of Article II, Air Pollution Control, Part 55 of Act 451 of 1994.

NAME 

DATE 8/27/18 SUPERVISOR 

