DEPARTMENT OF ENVIRONMENTAL QUALITY
AIR QUALITY DIVISION
ACTIVITY REPORT: Self Initiated Inspection FY 2016 Insp-

U6311044732086

FACILITY: SABIC- Exatec Innovative Plastics Company	**SRN / ID:** U63110447
LOCATION: 31220 Oak Creek Road, Wixom	**DISTRICT:** Southeast Michigan
CITY: Wixom	**COUNTY:** OAKLAND
CONTACT:	**ACTIVITY DATE:** 10/21/2015
STAFF: Iranna Konanahalli **COMPLIANCE STATUS:** Compliance	**SOURCE CLASS:**
SUBJECT: FY 2015 inspection of SABIC Innovative Plastics Company	
RESOLVED COMPLAINTS:	

U-63-11-0447 _ SAR_ 2015 10 21

SABIC Innovative Plastics Company (U-63-11- 0447)
fka EXATEC, LLC
31220 Oak Creek Road
Wixom, Michigan 48393-2432

On October 21, 2015, I conducted a level-2 self-initiated inspection of SABIC Innovative Plastics Company ("SABIC"), fka EXATEC, LLC, a prototype, R&D, testing company for polycarbonate windows and windshield, located at 31220 Oak Creek Road, Wixom, Michigan 48393-2432. The inspection was conducted to determine compliance with the Federal Clean Air Act; Article II, Part 55, Air Pollution Control, of the Natural Resources and Environmental Protection Act, 1994 PA 451 and Michigan Department of Environmental Quality, Air Quality Division (MDEQ-AQD) administrative rules.

During the inspection, Mr. Mike DeLuka (Phone: 248-926-4210; Fax: 248-960-1143; Cell: 248-787-3226; E-mail: Michael.DeLuka@sabic.com), Environmental, Health & Safety Manager, assisted me.

Mr. Bien (Billy) T. Bui (Phone: 248-926-4267; Fax: 248-960-1143; E-mail: bien.bui@sabic-ip.com), Facilities Manager, separated about July 2014.

EXATEC, LLC was a joint venture between Bayer Materials and GE Plastics. SABIC, a Saudi Arabia based industrial chemicals company, bought GE plastics in 2008. Subsequently, it also bought all outstanding Bayer shares. About 60 employees are present this site.

Sabic developed new range of Lexan GLX polycarbonate resins for automotive glazing. Lexan GLX polycarbonate resins are already used in high performance racing vehicles. Polycarbonate is 50 percent lighter than glass.

At Wixom site, a small-scale production for prototypes is done. The facility develops polycarbonate windows and windshield for cars and trucks. SABIC develops coatings for polycarbonate applications including R & D, testing and prototype. At Wixom facility, SABIC employs total of 60 employees: 20 in production and the rest in sales, service and marketing. Polycarbonate windows in cars and trucks can reduce vehicle weigh; lower weight helps improve mileage (miles / gallon). At this Wixom facility, only prototype light-weight polycarbonate products are made for marketing purposes. Often the products are installed on vehicles and tested for weight reduction versus miles-per-gallon improvement. SABIC found some gains in mileage (miles per gallon) as result of glass weight reduction using vehicles available for consumers such as FCA Jeep Commander.

Thermal Injection

One Thermal Injection (one-component) molding machine for polycarbonate windows production is present. Release coatings are not used; no volatile organic compounds (VOC). About 200 gallons / month of IPA alcohol is used for cleaning and waste IPA is disposed of according to RCRA.

Zoned heater is controlled for temperature based upon material. A robot is present to install the part.

Thermal Injection molding machine is exempt from Rule 336.1201 pursuant to Rule 336.1286.

One 10 ft. * 6 ft. spray booth (open booth) - Idle

One spray booth, which uses about 0 (idle) gallon month of paints / coatings is present. The booth is equipped with back-draft dry filter system. The booth is exempt from Rule 336.1201 (Permit-to-Install) pursuant to Rule 336.1287(c).

During the FY2011 inspection, I found holes and gaps in the dry filter system. I asked Mr. DeLuka to install the filters such that they fit, at all times, snugly without gaps and holes. I also asked him to keep records of paint and solvent usage.

Mr. Bien (Billy) Bui stated that the booth had been idle since January 2013; it is now used as storage space. The booth continues to be idle (FY 2016).

Four Cutting saws

4 cutting machines are present. Each machine has its own capture device for particulate matter emissions. The captured particulate laden exhaust gases are transported via dedicated hoses to two large bags. Collected particulates are dropped into two plastic bags for disposal. Cleaned exhaust gases are released to in-plant environment.

The machines are exempt from Rule 336.1201 (Permit-to-Install) pursuant to Rule 336.1285 (l).

Silkscreen printing machines - idle

Two silkscreen printing machines are present to draw designs on polycarbonate windows. The silkscreen printing is exempt from Rule 336.1201 (Permit-to-Install) pursuant to Rule 336.1287(e).

Silkscreen cleaning booth uses Easi-Sol (C-99) solvent Silkscreen machines are hardly used for the last couple of years (CY2012-2014).

Easi-Sol C99 Solvent (EasyWay Systems, Inc., Delano, MN 55328, 763-972-6306)

Greater than 99 percent propylene carbonate CAS 108-32-7

VOC = 0.8 pounds per gallon (99 g/L)

Flash Point (FP) = 200 ºF TCC. Auto Ignition = NA ºF. Boiling Point (BP) = 444 ºF @ 760 mm Hg. Vapor Pressure (VP) = 0.02mm Hg at 68 ºF. Specific Gravity (SG, Water = 1.0) =

1.19. Density (ρ) @ 68 °F = 9.9 lbs. / gallon (1.19 kg /L). Flammability range = NA %v (LEL) – NA%v (UEL).

Coating process enclosure in a room (100% CE) with thermal oxidizer

Plaques are cleaned using IPA rags. Plaques are then cleaned using deionized air. Water based primer is applied and thermally cured. Window is cooled. Then solvent based topcoat is applied. Topcoat is flashed off. Topcoat is thermally cured. Both primer and topcoat coating is done in the same room. One natural gas fired oven (170 °F) is present. All coatings are clearcoat (CC) coatings.

The VOC control room is 1,000 Class Clean Room based upon particulate matter (PM) in the room. Overhead conveyor is present.

VOCs from the entire room, which has a total enclosure, are controlled using a natural gas fired thermal oxidizer (1.25 MM BTU per hour) maintained at 1200 °F. A log of oxidizer temperature is maintained. VOC laden air flow is 100 cfm. Thermal oxidizer is made by Consolidated Engineering Company of Atlanta, Georgia (Serial No.: 12532; Model: Thermal Oxidizer; Date: 05/13/2008; Max heat input: 1.25 MM BTU per hour).

60 gallons per month of water based primer and 60 gallons per month of solvent based topcoat are used. In 2015, 45 gallons per month coatings were used until October 2015.

The booth / room is exempt from Rule 336.1201 (Permit-to-Install) pursuant to Rule 336.1287 (c).

Plasma coating chamber

This is plasma enhanced chemical vapor deposition process.

Windows are loaded and locked in the plasma coating chamber. Heating station heats a window. At station #1, layer #1 is deposited. At station #2, layer #2 is deposited for durability. Plasma coating chamber is under vacuum (40 mili Torr). Argon arc plasma generator deposits silicone salaxine coatings. The exhaust from the chamber is pumped using four stages. All contaminants are condensed by cooling. In addition to condenser, cartridge filters ate present to further clean air after condenser. Purified air is exhausted via a stack.

1 Torr = 1/760 atm. 1 atm = 101,325 Pascals (Pa). 1 bar = 100 kilo Pascal (kPa). 1 Pa = 1 N/m^2.

Condensed material is disposed of as RCRA hazardous material due to flammability via incineration.

The chamber is exempt from Rule 336.1201 (Permit-to-Install) pursuant to Rule 336.1283 because all work is R&D, prototype.

Safety-Kleen and Chicago Electric Power Tools cold cleaners

In CY 2001, Safety-Kleen cold cleaner was removed. However, few years ago, Chicago Electric Power Tools Parts Cleaner was installed.

One unit (5 ft. * 3 ft. Chicago Electric Power Tools Parts Cleaner), which may be described as "soaker tank", is present. Mineral spirits, a low vapor pressure organic solvent, is used as a cleaner.

The cold-cleaners are subject rule 336.611 or 336.1707 depending on if it is new or existing. A cold-cleaner is exempt from Rule 336.1201 pursuant to Rule 281(h) or Rule 285(r)(iv). Existing cold cleaners were placed into operation prior to July 1, 1979. New cold cleaners were placed into operation on or after July 1, 1979.

Mineral spirits containing no halogenated solvents is used. The Cold-cleaners is NOT Subject to: 40 CFR, Part 63, Subpart T, NESHAP/ MACT T, since solvents containing halogenated compounds are not used.

During FY 2016 inspection, I gave DEQ's decals for "cold-cleaner operating procedures" for posting and complying with work-practice rules. I asked the company to follow the common sense work practice in the procedures.

The SABIC's own operating procedures were posted. Mechanically assisted lid was closed.

Naptha Petroleum Distillate CAS 64742-48-9. Mineral Spirits (Univar USA, Inc. Redmond, WA, 425-889-3400)

100% VOC solvent. Flash Point (FP) = 120 °F TCC. Auto Ignition = 689 °F. Boiling Point (BP) = 340-376 °F @ 760 mm Hg. Vapor Pressure (VP) = 0.106 kilo-Pascal (kPa) at 20 °C. Specific Gravity (SG, Water = 1.0) = 0.759. Density (ρ) @ 68 °F = 6.33 lbs / gallon (0.759 kg /L). Flammability range = 0.7 %v (LEL) – 5.4%v (UEL). Viscosity = 1.39 centistokes

Conclusion

All process equipment are exempt from Rule 201 (Permit-to-Install) pursuant to Rules 281, 283, 285, 287

NAME [signature] DATE 11/09/2015 SUPERVISOR CJE