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

B421268910

FACILITY: DDP Specialty Electronic Materials US9, LLC		**SRN / ID:** B4212
LOCATION: 1635 N GLEANER RD, HEMLOCK		**DISTRICT:** Bay City
CITY: HEMLOCK		**COUNTY:** SAGINAW
CONTACT: Jeff schrems ,		**ACTIVITY DATE:** 08/29/2023
STAFF: Kathy Brewer	**COMPLIANCE STATUS:** Compliance	**SOURCE CLASS:** MINOR
SUBJECT: On Site inspection of former Opt-Out facility.		
RESOLVED COMPLAINTS:		

The site makes silicone and silicone elastomer products used in healthcare products. There are approximately 1500 product families the site may produce. There are 3 main activities. Mixing, followed by the Extrusion process and a separate Fluids process. Mixers and Extrusion areas are in one process area. Fluids are in a different process area.

Emissions are mostly generated from from mixing vessels. The site also controls emssions from silica handling activies.

The facility was previously issued PTI No. 110-11A and used Rule 201 permit exemptions allowed by Rule 290 for other emission units. After a company internal review, the facility determined that emission units permitted in PTI No. 110-11A qualify for Rule 201 permit exemptions allowed in Rule 290 or Rule 291. On July 15, 2020, the site requested to void PTI No. 110-11A. On March 9, 2021 the PTI No. 110-11A was voided by AQD.

The site is an Area Source for HAPs and has an emergency engine subject to 40 CFR Part 60 Subpart IIII. The site complies with the requirements of 40 CFR Part 63 Subpart ZZZZ by meeting the requirements in 40 CFR Part 60 Subpart IIII.

On site we viewed Mixing (Elastomers) and Fluids (Pressure sensitive adhesives) production areas, control devices, operations screens, control device operating records, emission records including production information, and the emergency engine.

At the time of the inspection the facility appeared to be in compliance with air regulation requirements.

Records reviewed

PTI No. 110-11A and Eval form

R201 permit exemption documentation

Operations Screen

- **Silica filter differential pressure**
- **Mixing process and Fluids process scrubber pH, flow**

Calibration records

- **Mixing silica filter**

Mixing and Fluids scrubber pH and flows

Emission records and calculations

Hours Mixing vessel operated and hours vented to control device

Hours Fluids vessel operated and hours vented to control device

Emergency Engine operating records and MACT determination

DESCRIPTION

There are 26 activities that use a Rule 290 or Rule 291 exemption. A list of the current exempt emission units is attached. For each emission unit the site documented air contaminants generated and whether emissions were controlled or uncontrolled.

The Mixer and Fluids process vents to one of four ammonia scrubbers when producing material that generate ammonia emissions. Spent scrubber fluid is disposed of off-site.

Extrusion activities vent to internal plant atmosphere.

The Dupont HIMS facility Potential to Emit HAP emissions are less than 10 for any individual HAP and 9.3 tons per year combined HAPs for the facility.

The site tracks emissions of GHG/CO2, VOCs, Mercury, Lead, Particulate Matter, and carcinogenic and non-carcinogenic Toxic Air Contaminants. We reviewed on site records for sitewide monthly emissions including emissions by product and production step. Emissions are tracked by the month by air contaminant including ITSL/IRSL based categories. A template with all potential air contaminants by product using monthly production information determines and records emissions from each product each month.

Based on the information reviewed the facility appeared to be in compliance with allowed emissions and is maintaining adequate emission records. An example of monthly emissions by emission unit is attached.

Scrubber and particulate filter daily operations data for selected dates were reviewed and are attached.

Recent calibration record examples for scrubber pH, flow, scrubber liquid level, and nitrogen vent flow transmitters were reviewed. Calibrations appear to occur a minimum of annually. Copies are attached.

Mixing process

The Mixing operation makes Liquid Silicone Rubber (LSR) and High Consistency Rubbers (HCR). The LSR is used for medical tubing in the Extrusion process. LSR is formed into pseudo-solid bricks and sent to the Extrusion process or wrapped for storage. The scrubber must be used when producing LSR in order to control the ammonia emissions that are generated. No ammonia is generated in the HCR process.

Liquid raw material from totes, drums or a tank farm are pumped into a process mixer and combined with silica. Most of the raw material handling is by totes and drums. Tanks are filled by truck and use a closed loop vent system. The tank farm does not vent to atmosphere except for emergency depressurization.

Silica is stored in an enclosed large silo filled by truck using a flex line. The silo is closed but could vent to atmosphere in an emergency over pressurization. Nitrogen is used to blow silica into a smaller in-plant hopper for use as needed in the mixing operation.

The silica handling activities vent to particulate filters. Silica transfer from the hopper to the reactors is done in a way to prevent emissions to assure sufficient silica is incorporated into the batch. Long pipe runs and condensers also reduce the amount of silica that could be emitted out of the mixer stacks.

On site we viewed a Mixing process area, and associated scrubber, silica hopper and silica filters. Operator screens show vent exhaust valve position and scrubber pH, flows and temperature. Differential pressure is also monitored. The operation monitoring screens have alarms for out-of-range values for differential pressure, scrubber pH, and scrubber flow.

Silica Bin Vent filter	Date	Time	dP " H2O
PDT7701_PV	9/19/2022	2:46-4:36 AM	0.124 to 0.125
PDT7701_PV	2/2/2023	8:11 -10:01 PM	-0.085 to – 0.07
PDT7701_PV	5/12/2023	9:46 – 11:36 AM	0.169 to 0.173

During the inspection the on site operators screen differential pressure viewed was 0.16 – 0.17 " H2O.

The Mixing operations ammonia scrubbers are only used for LSR products that generate ammonia. The scrubber is started only when needed. No venting to the scrubber occurs until performing a reaction that generates ammonia. The primary concern is making sure the pH does not get too high such that ammonia would no longer be controlled.

Records reviewed showed the scrubber was used for periods when the LSR process had the potential to generate ammonia emissions.

The scrubber pH is maintained normal operating range is between a pH of 3 to a pH of 7 with a high level alarm setpoint at a pH of 9.

Clean out of the Mixing process vessel is done by using HCR that is reused.

Records for meters associated with ammonia scrubbers indicate the facility is properly operating the control devices.

Scrubber	Date	Time	pH (AA_1524_PV)	Flow (FA1501_PV)	Temp (TA1475_PV)
LSR scrubber 1524	2/3/2023	1:30 AM	6.47	8.36 gpm	31.4 C
LSR scrubber 1524	5/12/2023	2:47 PM	5.81		
LSR scrubber 1524	8/29/2023	8:23 AM	2.85	0 gpm	20.3 C

Calibration records for meters associated with ammonia scrubbers indicate the facility is properly maintaining the control devices.

Equipment	Meter Calibration Date	Parameter
500 Gallon scrubber	May 5, 2023	Flow
500 Gallon scrubber	Oct. 8, 2023	pH
RDH Scrubber	July 7, 2023	pH
RDH Scrubber	Oct. 4, 2023	Flow

Extrusion

Extrusion process makes medical tubing. All emissions are vented into the general plant environment.

Fluids

The Fluid process produces a smaller variety of products. When the Fluids process makes pressure sensitive adhesives (PSA), the mixing vessel vents to a scrubber. The Fluids process also generates VOCs.

The scrubber pH is maintained normal operating range is between a pH of 3 to a pH of 6 with a high level alarm setpoint at a pH of 7.

Records for meters associated with ammonia scrubbers indicate the facility is properly operating the control devices.

Scrubber	Date	Time	pH (AA_1666_PV)	Flow (FA_1674_PV)	Reactor vessel level
PSA Scrubber 1	9/27/22	7:42 AM	3.48	4.59 gpm	80%
PSA Scrubber 1	2/27/2023	3:30 PM	2.77	4.59 gpm	74%
PSA Scrubber 1	5/30/2023	10:46 PM	3.83	4.58 gpm	51%
PSA Scrubber 1	8/29/2023	7:42 AM	3.36	4.65 gpm	78%

Calibration records for meters associated with ammonia scrubbers indicate the facility is properly maintaining the control devices.

Equipment	Meter Calibration Date	Parameter
PSA Scrubber #1871 (1674)	March 10, 2023	Flow
PSA Scrubber #1871 (1674)	March 14, 2023	Flow

Engine

HIMS installed a 380 BHP diesel compression ignition (CI) reciprocating internal combustion engine (RICE) to drive an emergency fire pump. The engine was manufactured in 2020. Based on the facility provided applicability determination (attached), the site purchased an EPA Tier 3 certified engine.

The engine has only been operated for maintenance purposes. Total operating hours are recorded monthly. We viewed the engine including the nameplate and hour meter. The total hours the engine has been operated since installation in 2021 was under 16 hours at the time of the inspection.

Fuel oil records state the sulfur content is a maximum of 15 ppm, w/a (Cetane index of 40, or Maximum aromatic content of 35% by vol)

NAME Kathy Brewer DATE 9/7/2023 SUPERVISOR Chris Hare