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

P102772386

FACILITY: DDP Specialty Electronic Materials US, LLC		**SRN / ID:** P1027
LOCATION: 3400 S. Saginaw Rd Unit 96, MIDLAND		**DISTRICT:** Bay City
CITY: MIDLAND		**COUNTY:** MIDLAND
CONTACT: Randy Reinke , Environmental Specialist		**ACTIVITY DATE:** 06/26/2024
STAFF: Nathanael Gentle	**COMPLIANCE STATUS:** Compliance	**SOURCE CLASS:** MEGASITE
SUBJECT: EURESIN_DRYER and EUFINEMESH(R290) Scheduled Onsite Inspection		
RESOLVED COMPLAINTS:		

On June 26, 2024, AQD staff conducted a scheduled onsite inspection of the emission units (EUs) identified as EURESIN_DRYER and Fine Mesh at DDP Specialty Electronic Materials US, LLC, SRN P1027. The purpose of the inspection was to determine compliance with the Federal Clean Air Act; Article II, Part 55, Air Pollution Control of Natural Resources and Environmental Protection Act, 1994 Public Act 451; Michigan Department of Environment Great Lakes and Energy, Air Quality Division (AQD) Administrative Rules and Renewable Operating Permit, MI-ROP-P1027-2020b. At the time of inspection, the facility was found to be in compliance.

Facility Description and History

DDP Specialty Electronic Materials US, LLC is a megasite located at 3400 South Saginaw Road Unit 96, Midland, Midland County, Michigan 48640. The stationary source consists of DDP Specialty Electronic Materials US, LLC and Nutrition & Biosciences USA 1, LLC (SRN P1027), The Dow Chemical Company (SRN: A4033), Dow Silicones Corporation (SRN: A4043), SK Saran Americas LLC (SRN: P1026), Corteva Agriscience LLC (SRN: P1028), and Trinseo LLC (SRN: P1025). During the June 25, 2024, inspection, compliance was evaluated for EURESIN_DRYER and Fine Mesh.

EURESIN_DRYER is in the 458 Building. The emission unit is a crude resin dryer used in conjunction with the resin manufacturing process. Resin is manually added to the dryer. Fresh air is pulled across steam coils to heat the air. The heated air is then blown across agitated resin beads. The dryer is equipped with screens to prevent product loss. Once dried, product is manually unloaded into drums to be used in resin manufacturing processes onsite. EURESIN_DRYER is a batch process based on demand.

EURESIN_DRYER is subject to the Miscellaneous Organic Chemical Manufacturing MON (40 CFR Part 63, Subpart FFFF). By virtue of being subject to Subpart FFFF, the emission unit is also subject to the equipment leak provisions of 40 CFR Part 63, Subpart H.

Fine Mesh is an emission unit that operates under Permit to Install (PTI) exemption Rule 290. The emission unit operates batch processes to produce ionized beads. The emission unit consists of two reactor vessels, one for the anion process, and one for the cation process.

The anion process begins with the chloromethylator stage where an active site is added to the beads. Next the beads are washed and enter the amination stage. Following the amination stage, beads are washed, dried and packaged. Emissions and materials from the anion portion of Fine Mesh are sent to the EUANION-XCHG recovery loop and control pathway. See the inspection report for EUANION_XCHG for additional details on the recovery loop and controls.

The cation process begins with sulfonation of the beads. The beads are then hydrated. Following hydration, beads are washed, dried, and packaged. Emissions from the cation portion of Fine Mesh are sent to directly to 963 THROX for control.

Fine Mesh is subject to the Miscellaneous Organic Chemical Manufacturing MON (40 CFR Part 63, Subpart FFFF). By virtue of being subject to Subpart FFFF, the emission unit is also subject to the equipment leak provisions of 40 CFR Part 63, Subpart H.

Compliance Evaluation

EURESIN_DRYER

EURESIN_DRYER was permitted under Permit to Install (PTI) No. 570-93A. The emission unit has permitted emission limits of 1.0 pph of styrene and 0.60 tpy of styrene. The styrene HAP emissions from the process are uncontrolled. Filter screens are in place to prevent product loss and PM emissions. Staff report filters are changed as needed based on visual inspection.

Special Condition (S.C.)VI.1. stipulates the permittee shall keep records of monthly and 12-month rolling emissions to demonstrate compliance with the permitted emission limits. Records of monthly and 12-month rolling emission calculations were provided and reviewed for the most recent 12-month period.

Emissions from EURESIN_DRYER are tracked and calculated using an emissions spreadsheet. The emissions are calculated based on worst case emissions and the number of batches dried each month. The worst-case emission rate was determined based on the maximum batch size that can fit in the dryer. Using worst case emissions, the facility determined the maximum hourly emission rate is 0.737 pph of total VOCs. As styrene is a VOC, this is below the permitted limit of 1.0 pph of styrene, S.C.I.1.

The 12-month rolling emissions are calculated based on the number batches dried each month. Records of 12-month rolling emissions were reviewed for the period of June 2023 to May 2023. During the period of records reviewed, the 12-month rolling VOC emissions ranged from 0.009 tpy to 0.032 tpy. As styrene is a VOC, this is below the permitted limit of 0.60 tpy of styrene, S.C.I.2. Records reviewed demonstrate the facility is maintaining appropriate records and was in compliance with the permitted emission limits during the period reviewed.

One stack vent is associated with EURESIN_DRYER, SV92013 (Dryer vent). The stack vent is permitted to have a maximum exhaust dimension of 14in x 16in and a minimum height above ground of 8ft. As part of the onsite inspection, SV SV92013 (Dryer vent) was visually verified to meet these stack height and dimension requirements.

Fine Mesh

FG290

Flexible group Rule290 encompasses any emission unit that emits air contaminants and is exempt from the requirements of Rule 201 pursuant to Rule 278, Rule 278a, and Rule 290. Emission units installed/modified before December 20, 2016, may show compliance with Rule 290 in effect at the time of installation/modification. Only portions of this flexible group applicable to the emission unit Fine Mesh were evaluated during this inspection.

Emission Unit Fine Mesh operates as exempt from the requirements of Rule 201, including needing a PTI, pursuant to Rule 278, Rule 278a, and Rule 290. In order to demonstrate the emission unit meets the exemption requirements of Rule 290, monthly records of actual emissions shall be maintained.

Records of monthly emissions were requested and reviewed for the period of June 2023 to May 2024. Monthly emission calculations are maintained in an emission spreadsheet. Emission are calculated based

on the number of both anion and cation batches produced. The spreadsheet utilizes emission factors staff report were determined based on worst case emissions. Air contaminants listed as being emitted from the Fine Mesh process include Hydrochloric Acid and Methyl Chloride from the anion portion of the process, and Methylene Chloride from the cation portion of the process.

Hydrochloric Acid and Methyl Chloride are noncarcinogenic air contaminants with ITSL's greater than 2ug/m3. As such, the total controlled emissions of both shall not exceed 500 lbs/month. During the period of records reviewed the total controlled emissions of both ranged from 0 lbs/month to 0.100 lbs/month.

Methylene Chloride is listed as a carcinogenic air contaminant with an IRSL greater than 0.04 ug/m3. As such, the total controlled emissions shall not exceed 10 lbs/month. During the period of records reviewed, monthly emissions of Methylene Chloride ranged from 0 lbs/month to 0.007lbs/month.

The facility appears to be maintaining sufficient documentation to demonstrate Fine Mesh meets the exemption requirements R290. Records reviewed demonstrated actual emissions from the process are well below the limits of the exemption rule.

MACT Compliance

EURESINDRYER and Fine Mesh are subject to the requirements of 40 CFR Part 63, Subpart FFFF (MON). The emission units are also subject to the equipment leak provisions of the HON (40 CFR Part 63, Subpart H). Onsite staff report Initial MACT applicability assessments were completed by the facility for the processes. As updates or changes occur to the regulations, staff report the entire processes are assessed for applicability and when necessary, actions are taken to ensure compliance. When process updates occur, a management of change (MOC) is utilized. Staff explained the MOC process entails review of process changes by environmental personnel. If the process change were determined to affect the processes' s applicability, actions would be taken to ensure compliance. In addition, staff report the facility has compliance related policies, procedures, and internal inspections that are updated during the MOC review process. In addition to during the MOC review process, internal compliance inspections are conducted routinely. These inspections are tracked using a digital task management system to ensure they are completed within the required timeframe. Each month, staff conduct a reasonable inquiry to assess compliance of the previous month with the MON and HON.

FGMONMACT-S1

This flexible group and its conditions apply to miscellaneous organic chemical manufacturing process units (MCPU) that are located at, or are part of, a major source as defined in section 112(a) of the Clean Air Act and that meet all the criteria specified in 40 CFR Part 63, Subpart FFFF (40 CFR 63.2435). It should be noted that only portions of this flexible group were reviewed in order to verify that EURESIN_DRYER and Fine Mesh are in compliance with the requirements.

EURESIN_DRYER consists of one stack vent. Styrene is the only HAP emission associated with the process. The process vent is a Group 2 batch process vent with total uncontrolled HAPs less than 200 lbs/yr. As a Group 2 batch process vent, control of the emissions is not required by the MONMACT.

Fine Mesh consists of process vents for the anion portion of the process and the cation portion of the process. The process vent for the anion portion of the process is a Group 1 vent. In order to maintain control pursuant to the MONMACT, the vent is controlled by the process control loop associated with EUANION-XCHG which includes a series of scrubbers and the 963THROX, see the EUANION_XCHG inspection report for additional details. The process vent associated with the cation portion of Fine Mesh is a Group 2 vent. As a Group 2 vent, control is not required pursuant to the MONMACT. However, the vent stream from the cation portion of Fine Mesh is sent to the 963THROX for control.

FGHONFUGTIVES-S1

This flexible group and its conditions apply to emission units subject to the requirements of 40 CFR Part 63, Subparts A (General Provisions) and H (HON for Equipment Leaks). It should be noted that only portions of this flexible group were reviewed in order to verify that EURESIN_DRYER and Fine Mesh are in compliance with the requirements.

By virtue of being subject to the MONMACT, EURESIN_DRYER and Fine Mesh are subject to the equipment leak provisions of 40 CFR Part 63, Subpart H. EURESIN_DRYER does not consist of any valves and therefore LDAR monitoring is not required. The unit consists of one emission point, the stack vent for the unit. Materials are manually loaded and unloaded into the emission unit.

LDAR monitoring of Fine Mesh is performed by an onsite contractor and an internal database of all components associated with the emission unit is maintained. The facility utilizes a digital task management system to ensure monitoring is completed in the required timelines. If leaks were to be identified, staff report prompt repairs are made to ensure leaks are corrected within the timelines stipulated by the HON MACT.

Summary

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NAME nathanael Gentle DATE 8/14/2024 SUPERVISOR