

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

A403365688

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|---|--------------------------------------|----------------------------------|
| FACILITY: The Dow Chemical Company U.S.A., Midland | | SRN / ID: A4033 |
| LOCATION: 1790 Building, MIDLAND | | DISTRICT: Bay City |
| CITY: MIDLAND | | COUNTY: MIDLAND |
| CONTACT: Jim Alger , Midland Area State Air Permitting Specialist | | ACTIVITY DATE: 12/08/2022 |
| STAFF: Kathy Brewer | COMPLIANCE STATUS: Compliance | SOURCE CLASS: MEGASITE |
| SUBJECT: FGRULE290 units EU433 & EU845 on site inspection portion of FCE 2022-2027 | | |
| RESOLVED COMPLAINTS: | | |

EU433 and EU845 are emission units utilizing the permitting exemption allowed by Rule 290. Emissions are uncontrolled. EU845 is subject to 40 CFR Part 63 subpart HHHHH Miscellaneous Coatings Manufacturing

MAERS emissions reported for 2021 were 23.55 lbs of polyethylene for EU433 and 0.077 lbs for all tracked emissions from EU845.

The inspection included an overview of the each process, review of operating records and walkthrough of the emission unit areas

At the time of the inspection the facility appeared to be in compliance with the Part 55 Rule 290 requirements and their ROP.

433 Building:

R290 Burn Off Oven - The oven is used to clean residual LDPE off of metal parts such as screws and dies. The amount of material going into the oven varies depending on the size of the parts but it is <5lbs on average. Once the chamber is closed and the cycle starts the oven pulls down to -300mb of vacuum and then the heating elements turn on. The oven heats to 450F and holds that temperature for about 3 hrs. This time allows any of the polymer to run down into the collection traps. After the 3 hour melting cycle the oven goes to 800F for the remaining pyrolysis cycle. Then the oven starts its cool down process before turning off. Total time is about 8 hours start to finish. Since the oven chamber is under vacuum no combustion occurs. Air from the oven operations are directed to a liquid pump impeller then vent to atmosphere. Pump water is sent to the onsite wastewater treatment plant.

For emission tracking the facility assumes all the polyethylene on parts placed in the burn off oven are emitted. Manual records of oven use are maintained. The assumed polyethylene burned off varies from 0 to 7 pounds per burn off depending on what part is cleaned. Emissions from recent activity are below.

| Operating month | Pounds polyethylene emitted |
|------------------------|------------------------------------|
| November 2021 | 1.25 |
| October 2021 | 4.5 |
| | |

August 2022

2.7

845 Building:

R290 YS3000 Process is a batch process. Raw material is fed into a vessel (V-400), then transferred at a controlled rate into a mixer (AI00) where water, surfactant and other process streams are added. The dispersion then enters one of two agitated degassing vessels (V-200 or V-300). The dispersion is then filtered and packaged.

The facility tracks the following pollutants:

- methylene diphenyl diisocyanate (CAS# 101-68-8)
- Methyl Pyrrolidone, N- (CAS# 872-50-4)
- 2-methyl-4-isothiazolin-3-one (CAS# 2682-20-4)
- Foamstar ST 2410 (CAS# 64742-65-0)
- Aminoethylethanolamine (CAS# 111-41-1)
- Carbon Dioxide (CAS# 124-38-9)

Emissions are calculated based the material and time for each process step and assuming worse emission scenario. Any emissions are released to the general in plant area.

| Pollutant | August 2021 | June 2021 | April 2022 |
|---|------------------|------------------------------|------------------|
| Total methylene diphenyl diisocyanate (MDI) | 0.00000101 lbs. | 1.3 x 10 ⁻⁶ lbs. | 7.01762E-05 lbs. |
| Total n-methyl-2-pyrrolidone (NMP) | 7.69309E-05 lbs. | 3.07 x 10 ⁻⁵ lbs. | 0.50544 lbs. |
| Total Carbon Dioxide (CO2) | 0 lbs. | | 138.57 lbs. |
| Total Aminoethylamine | 4.667E-07 lbs. | 4.67 x 10 ⁻⁷ lbs. | 0.009392 lbs. |
| Total Foamstar ST2410 | 1.382E-07 lbs. | 1.38 x 10 ⁻⁷ lbs. | 0.000002764 lbs. |

The January – June, July – December 2021, and January – June 2022, MACT HHHHH Miscellaneous Coatings Manufacturing reported no deviations. EU845 process uses heat exchange systems (E-7000, E-8000, and E-902). No heat exchanger requirements under Subpart HHHHH apply because all three use MDI which is a HAP not listed on Table 4 of Subpart F. The March 2022 NOC was update to add tank V-1100 to process vessels (Section III) and to update site contacts.

NAME Kathy Brewer

DATE 2/27/2023

SUPERVISOR Chris Kane