

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

A403328986

FACILITY: The Dow Chemical Company U.S.A., Midland		SRN / ID: A4033
LOCATION: 1790 Building, MIDLAND		DISTRICT: Saginaw Bay
CITY: MIDLAND		COUNTY: MIDLAND
CONTACT: Kayla Peacock, Air Delivery Specialist		ACTIVITY DATE: 03/25/2015
STAFF: Kathy Brewer	COMPLIANCE STATUS: Compliance	SOURCE CLASS: MEGASITE
SUBJECT: EU-Resin_Dryer and B1385-Rule 290- EM MDP Reaction site inspections. Process & records review.		
RESOLVED COMPLAINTS:		

Inspection date Mar 25-2015 Inspection started: 8:30 AM Inspection ended: 3:30 PM

Emission units inspected:

EU-Resin_Dryer-S1

B1385-Rule 290- EM MDP Reaction Advanced Materials – Electronics in Building 1385

Dow and MDEQ-AQD staff present during the entire inspection.

Kathy Brewer (MDEQ-AQD)

Kayla Peacock (Dow, Air Delivery Specialist)

EU -Resin Dryer-S1

Additional Dow staff:

Colleen Rosenbrock (Environmental Specialist)

Paul Ochenski (Environmental Technician)

John Wrobel (Plant Engineer)

Compliance Status: Compliance

The dryer operation is a batch process. Resin is manually added to the dryer, screened and sent to a reactor in the resin manufacturing process. The dryer uses noncontact heat and has one vent. Emissions are uncontrolled. Equipment located in 458 Building.

When operating the process usually runs one batch per shift. The frequency of operation varies depending upon demand with some months having no operating days. We viewed the emission unit and vent. The unit was not operating at the time of the inspection and had not yet operated during March 2015.

The resin dryer ROP contains the following emission limits:

Pollutant	Limit	Time Period/ Operating Scenario	Equipment	Monitoring/ Testing Method	Underlying Applicable Requirements
1. Styrene	1.0 pph ¹	Test protocol	EURESIN_DRYER- S1	GC 13	R 336.1224 R 336.1225
2. Styrene	0.60 tpy ¹	12-month rolling time period as determined at the end of each calendar month	EURESIN_DRYER- S1	SC VI.1	R 336.1224 R 336.1225

The resin dryer emission estimates are based on number of batches from production information and batch information for each material produced (Styrene and VOC emissions/batch).

The emission unit has no material limits, operating restrictions, or equipment parameters designated in the ROP.

The facility is required to keep records of monthly emission calculations and results to demonstrate compliance with the emission limits. And, within 30 days following the end of each calendar month, calculate and record emissions from the process for the previous calendar month to demonstrate compliance with the 12-month rolling time period emission limits.

I reviewed the batch and emission records for August 2014 and January 2015. The 12 month rolling styrene emissions as of the end of August 2014 was 0.737 lbs/hr and 0.01 TPY. The 12 month rolling styrene emissions as of the end of January 2015 was 0.737 lbs/hr and 0.02 TPY. A copy from a portion of the records reviewed during the are attached.

No deviations for this emission unit were reported in annual certifications for 2014.

The exhaust gases are discharged from an unobstructed horizontal stack. The ROP lists a vertical stack and should be corrected.

Stack & Vent ID	Maximum Exhaust Dimensions (inches)	Minimum Height Above Ground (feet)	Underlying Applicable Requirements
1. SV92013	14 x 16 ¹	8 ¹	R 336.1225

Rule 290

B1385-Rule 290- EM MDP Reaction

Additional Dow staff:

Colleen Rosenbrock (Environmental Specialist)

Dan Lambesis (Plant Engineer)

Ray MacMurray (Environmental Technician)

Compliance Status: Compliance

The process produces polymer intermediates for use in formulations at a site in Massachusetts. The process began production in 2010. The reactions take place in 20 to 50 liter reactors. The reactors, feed stock & process condensers are all in a large laboratory style hood that vents to the atmosphere uncontrolled. Batch run sheets are reviewed as part of the process quality checks. The intermediate must meet strict specifications to be acceptable so changes are undesirable. If there is a variation in raw materials, temperature, or other reaction process conditions, the emission calculations are modified for that event and the batch notes reflect any change.

The number of batches per day is tracked. The materials used have known vapor pressure at processing conditions. Each emission episode in the process eg. filling loss, batch reaction temperature, is summed for inclusion in the Rule 290 tracking. No credit is taken for the emissions captured by condensers in the emission calculations. The emissions are tracked by screening level range (ITSL >2; 2>ITSL> 0.04). Emissions are evaluated against ITSL values.

I reviewed the process area & production information for August 2014 & January 2015. The emissions were below the ITSL screening levels. In August 2014 the emission of pollutants with 2>ITSL>0.04 ug/m3 was 0.03 lbs and 43.54 lbs for ITSL >2 ug/m3. In January 2015 the emission of pollutants with 2>ITSL>0.04 ug/m3 was 4.82 lbs and 43.58 lbs for ITSL >2 ug/m3. A summary of the monthly emissions is attached.

The FGRULE290 Building 1385 EM was included in a deviation report for January 1 through June 30, 2014. Findings from an internal audit that began in May 2014 reported that this emission group & others

did not have all sampling connections in >5% HAP service uniquely identified as LDAR applicable equipment.

Miscellaneous Rule 290

Based on AQD district file information I planned to review B1385 Tin MSA Advanced Materials electronics and B1351 Anode & Cathode Dow Electronic Materials (DEM). The last production runs for B1351 Anode & Cathode DEM EU occurred in 2013.

Per on site discussions & a March 30, 2015 email from K. Peacock, the following RULE 290 Group Emission units have been shut down:

B1-FG290 (Spinetoram)

B1037-FG290 (Beta plant – transformer oil)

B1200-FG290 (Renagel)

B1385-Rule290 (EM Tin MSA)

B1776-R290 (Polyurethane Dispersion)

B1776-R290 (Polyurethane Dispersion)

B1351 DEM Anode and Cathode

The following Rule 290 emission units have been added:

Emission Unit Identification	Plant/Process	Bldg.	Applicable Rules
B1385 R&D AEM Rule 290 BCB-AA	Research	1385	MON MACT
B1385_1712 R&D AEM SILK_Cyclotene	Research	1385	MON MACT
B1710 Rule 290 GMA-DFP Project	Research	1710	No HAPS

Miscellaneous:

In addition to the compliance inspection activity, I met with Dow staff to review an example of how “flexible permit” monitoring, recordkeeping & permit limit conditions are implemented. Emission Unit EU-02-S1 is an agricultural multiproduct plant with emission limits grouped by categories. The categories are based on the screening levels and emission rates. Emissions are controlled by the Saran TTU and particulate filters.

The EU is subject to Pesticide Active Ingredient MACT (Subpart MMM) and Hazardous Organic NESHAP (Subpart H) . To achieve compliance with MACT requirements the facility has cascaded control devices and received approval for alternative monitoring.

Emission estimates are based on production pounds and batch information for each material produced. (Pounds of production; pounds of component /batch; emissions/batch; emission control efficiency), and , material handling (pounds or emissions from offloading material; control efficiency). For hourly based emissions the maximum process potential emissions (using MACT vapor displacement assumptions) are used to generate the peak pound per hour emissions that are included in the calculations for compliance determinations.

The screening levels for each material in a category based emission limit is reviewed annually. A change log is kept of material, production, emission calculations, or other changes.

Management of Change (MOC) is Dow’s site wide process for proposing, implementing, & reviewing changes to processes, including operating, monitoring, & recordkeeping changes that are subject to air regulations.

We also reviewed the current record keeping and proposed record keeping for Dow Automotive bonding & adhesives production. The process will utilize emission tracking similar to the EU-02-S1 process. Updates or any changes to the process will follow the MOC procedure.

NAME Kalya B

DATE 3/31/2015

SUPERVISOR C. Hane