

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

A403336846

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, Environmental Specialist		ACTIVITY DATE: 09/20/2016
STAFF: Kathy Brewer	COMPLIANCE STATUS: Compliance	SOURCE CLASS: MEGASITE
SUBJECT: B1385 R&D AEM Rule 290 BCB-AA – research, B1385-1712 R&D AEM SiLK_Cyclotene Research,		
RESOLVED COMPLAINTS:		

Inspection date Sept 20, 2016

Emission units inspected: B1385-Rule 290- AEM Building 1385 BCB-AA -Research

Kathy Brewer (MDEQ-AQD)

Kayla Peacock (Dow, Air Delivery Specialist)

**Description:**

1385 Building is a market development plant and a research and development facility. Several small specialty batches may be run per week (custom products in 5L to 22L batches). Provide Cyclotene resin plant support, R&D for several processes and materials. Both processes are subject to 40 CFR Part 63 Subpart FFFF(MON)

**Attachments**

Overview of 1385 building operations

July 2016 R290 calculated emissions 1385 Bldg Labs 111, 121; 1712 Bldg labs 8, 10

May 2015, Feb 2016, May 2016 R290 calculated emissions 1385 Bldg Labs 111, 121; 1712 Bldg labs 8, 10

**1385 building**

BCB-AA/AD-BCB April 2015, May 2015, Feb 2016, May 2016 R290 calculated emission

Process chemical list of ITSL and IRSL for emitted/tracked pollutants for Cyclotene\_SiLK and BCB-AA processes.

**Compliance Status: Compliant**

We viewed the process/lab including the hood area and production area. Components for each batch are weighed manually then added at the mixing/reaction area. The batch sheets have the recipe component ratios. The size, time and temperature of reaction are included as part of the emission estimate. Process vessels are closed loop during purification. Filtration and bottling are done inside a cleanroom at 1712 building. Emissions are generated in the lab while loading or unloading the 5-10 liter canisters and vent to a lab hood. All vents go to the atmosphere.

Runsheets specify loading and running conditions for each batch type. The monthly R290 emissions are calculated for each batch type. No IRSL are applicable. The lowest applicable ITSL is 1 ug/m3. Per R290 20 lbs/month of uncontrolled emissions would be the most restrictive emission limit. The largest emissions were 0.95 pounds/month for any pollutant emitted from the process. A summary of the monthly emissions is attached.

**Cyclotene\_SiLK Process**

Pollutant	ITSL	Averaging Time	Highest emissions from records review
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	(ug/m3)		(lb)
Methanol	3250	1 hr	0.02
mesitylene	50	Annual	0.07 (1712 bldg) 0.12 (1385 bldg)
mesitylene	1200	8 hr	-
cyclohexanone	800	8 hr	0.15 (1712 bldg) 0.02 (1385 bldg)
Tetrahydrofuran	8000	Annual	0.02
Acetone	5900	8 hr	0.02
Propylene glycol methyl ether acetate	3000	24 hr	0.
Proglyde DMM	59	24 hr	0.95

BCB-AA Process

Pollutant	ITSL/IRSL (ug/m3)	Averaging Time	Highest emissions from records review (lb)
Trimethylamine	7	24 hr	0
N,n-dimethylformamide	30	24 hr	0
Proglyde DMM	59	24 hr	0.22
Acrylic acid	1	24 hr	0
Mixed xylenes	100	24 hr	0

NAME *K. [Signature]*

DATE *4/13/2017*

SUPERVISOR *C. [Signature]*