

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

B402264540

FACILITY: DOW Silicones Corporation		SRN / ID: B4022
LOCATION: 5300 11 MILE RD, AUBURN		DISTRICT: Bay City
CITY: AUBURN		COUNTY: BAY
CONTACT: Jim Alger , EHHS Specialist		ACTIVITY DATE: 09/15/2022
STAFF: Kathy Brewer	COMPLIANCE STATUS: Compliance	SOURCE CLASS: SM OPT OUT
SUBJECT: Two Companies with one SRN. On site inspection and records review for Dow Auburn PTI #13-14C		
RESOLVED COMPLAINTS:		

Dow Auburn SRN B4022

The Dow Auburn MI facility produces 1000 plus products using over 300 chemical formulations for customers in the automobile, aerospace, and computer industries and conducts product research and testing. Many products are based on blending and mixing operations. The permit established production limits based on "Product Family". The site tracks over 30 Product Family production rates.

The facility with assigned SRN B4022 was originally one site. The site was issued a Title 5 Opt-Out permit. In 2018 the site split assets between two companies and PTIs were issued to each company on December 11, 2018. The current owners are Dow Chemical and SK Siltron. Dow Chemical was issued PTI #13-14C . SK Siltron purchased assets from Dow Dupont that are in PTI #184-18. Each of the PTIs contain facility emission limits (FGFACILITY) that divide emissions based on assets owned to maintain emissions below the Opt-out stationary source total.

For Dow Auburn activities Methanol emissions were a significant portion of the emissions contributing to the need for an Opt-out permit. Per Dow staff the product that generated much of the methanol has been discontinued.

The contaminant emitting activities at the Dow portion of the site with SRN B4022 all meet a Rule 201 air permit requirement exemption. A list of the emission units with the R201 permit exemption, control device where applicable, and vent IDs is attached.

A pre-inspection meeting was held with the company to review site processes emitting air contaminants, emission control devices, and what air regulatory required records are maintained.

I conducted an on site inspection of the air regulated Dow Chemical activities on September 15, 2022. The inspection included a review of production areas, control devices, and on site records.

The company appeared to be in compliance at the time of the inspection.

Attachments

Emission list w/R 201 exemption and vent information

April 2020, August 2021, and January 2022 emissions

- Particulate
- VOC
- Total HAP
- Individual HAP

Data flow of production information to emission calculations**Dust collector PM scheduled and historical****Dust collector differential pressure April 2020, August 2021, January 2022, September 15, 2022****MAERS 2021 emission unit list****PTI 13-14C EVAL Product family description and estimated emissions****Description**

The site has 50 activities that are each designated as an emission unit. Emission units/activities are associated with a module (Mod). Several activities vent uncontrolled to in plant or directly to atmosphere. Some vents in each Mod have emissions controlled by a condenser and Mod 2 has some activities exhaust controlled by a condenser followed by a scrubber. A general description of each modules activities is attached.

Module 0 and Module 1 used for product packaging based on customer designated requirements. Emissions are vented to the room HVAC and local exhaust ventilation. Some Mod1 SFM process vent to a condenser prior to atmosphere.

Module 2 uses a variety of mixers. Emissions can be vented through a condenser, condenser followed by an ammonia scrubber, directly to atmosphere, or through a Torrit dust collection system.

Module 3 also uses a variety of mix tanks. Most material additions are done manually. Emissions can be vented through a condenser, directly to atmosphere, or through a Torrit dust collection system.

Most production occurs in Mod2 and Mod3.

Module 4 is used for research and development for customer requests. There are several lab bench scale activities. Emissions are vented to in plant or directly to atmosphere.

Emission Units viewed during the on site inspection include:

EUAUB-10: Mod1 SFM process in clean rooms. Some activities vent to a condenser.

EUAUB-17 : Example accumulation area used throughout the site for waste. All vent to the in plant environment. The facility assumes all materials vent at same rate as mineral spirits, containers are 55 gallons, and if less than 3,724 55 gallon drums are handled the emissions are <120 lbs VOC.

EUAUB-25: Mod2 drum tumbles mixer for individual containers. Uncontrolled emissions to in plant environment except for small amounts of pigment (grams) that vent to dust control.

EUAUB-25: MOD 2 cold cleaner. Covered, signage present. Vents to in plant environment. Site personnel empty, clean, and transfer waste to a 90 day storage area.

DV102762259 & DV102768932: MOD2 East & West Dust collectors and dP monitoring device.

EUAUB-301: Mod3 Turello 750 L mixer #3. Emissions vent to dust collector or vacuum system to condenser.

EUAUB-40: Mod 4 lab areas. All vent to atmosphere or in plant environment.

FGFACILITY Emissions

The following emission records reviewed indicate the facility was in compliance with permitted emissions.

I. EMISSION LIMIT(S)

Pollutant	Limit	Time Period / Operating Scenario	Jan 2022 Monthly/ 12 month (TPY)	Aug 2021 Monthly/ 12 month (TPY)	April 2020 Monthly/ 12 month (TPY)
1. PM 2. PM10 3. PM2.5	Less than 80 tpy	12-month rolling time period as determined at the end of each calendar month	0.03/0.37	0.41/0.03	0.07/0.46
4. VOC	Less than 83.9 tpy	12-month rolling time period as determined at the end of each calendar month	1.5/13.3	1.2/8.8	0.51/61.2
5. Total HAPs	Less than 21.6 tpy	12-month rolling time period as determined at the end of each calendar month	0.15/1.4	0.15/0.69	0.09/1.24
6. Each individual HAP	Less than 8.5 tpy	12-month rolling time period as determined at the end of each calendar month	22 tracked. All <1 TPY		

Some of the facility reported emissions in MAERS are grouped by MOD.

RG/EU in MAERS	2021 reported emissions	EU in MAERS RG
RGAUB1290 Exempt under R290 (MOD1):	4836 lbs VOC	EUAUB11 shop site cleaner EUAUB-13 analytical lab, EUAUB-16 comfort heater,

		EUAUB10- SFM manufacturing (resin drying, rinse solvents, bottle cleaning)
RGAuthMOD2290 Exempt under Rule 290(MOD2):	5086.21 lbs VOC	EUAB-21 through 27
RGAuthMod3290 Exempt under Rule 290(MOD3):	5982.7 lbs VOC	EUAUB-30 EUAUB-301 through 307;(variety of mixers, coldcleaner) EUAUB-31 through 39 (variety of mixers, tanks and a drum oven)

The following R201 exempt EUs were viewed and emission records and reviewed .

EU & MOD	Air Rules Part 201 Permitting exemption	Emission determination method
EUAUB-17 Site waste pourdown	Rule 291(b) ≤120 lbs emission/yr)	Assume maximum utilization available waste drums throughout site using default mineral spirits emission rate
EUAUB-10 MOD1 SFM Manufacturing process	Rule 290 Most limiting R290 Tox Cat comparison to emission master estimate	Monthly Emission master estimates tracked
EUAUB-25 MOD2 Drum Tumble mixers(4)	Rule 290 Most limiting R290 Tox Cat comparison to emission master estimate	Monthly Emission master estimates tracked
EUAUB-301 MOD3	Rule 290 Most limiting R290 Tox Cat comparison to emission master estimate	Monthly Emission master estimates tracked

750 L Turello mixer		
---------------------	--	--

II. MATERIAL LIMIT(S)

The PTI limits the production of 36 Product Families at the Dow Auburn facility. The following records reviewed indicate the facility is in compliance and production limits are considerably below allowed limits.

Material	Limit Lbs/yr	Time Period / Operating Scenario	Jan 2022 Monthly/ 12 month	Aug 2021 Monthly/ 12 month	April 2020 Monthly/ 12 month
SC 7. Product Family 7	13797000	12-month rolling time period as determined at the end of each calendar month	22118	46386	42393
			578116	529594	311930
SC 12. Product Family 12: Larger scale mixer working with high viscosity material and fillers; stripping by heat and vacuum	10,000	12-month rolling time period as determined at the end of each calendar month	0	0	0
			391	0	399
SC 18. Product Family 18: Drum tumbling of material	1,000,000	12-month rolling time period as determined at the end of each calendar month	19080	20681	57282
			282887	309399	133621

Material	Limit Lbs/yr	Time Period / Operating Scenario	Jan 2022 Monthly/ 12 month	Aug 2021 Monthly/ 12 month	April 2020 Monthly/ 12 month
SC 20. Product Family 20: Mixing in totes with pump recirculation	21,202,280	12-month rolling time period as determined at the end of each calendar month	139113	171281	203009
			2621483	2797599	2302756
SC 24. Product Family 24: Larger scale mixer working with high viscosity material and fillers; stripping by heat and vacuum	500,000	12-month rolling time period as determined at the end of each calendar month	1217	0	0
			10299	15144	9988
SC 35 Product Family 35: Larger scale mixer; stripping by heat and vacuum	10,000	12-month rolling time period as determined at the end of each calendar month	249	163	0
			1365	1447	4683

III. PROCESS/OPERATIONAL RESTRICTION(S)

SC 1. Requires satisfactory operation of the dust collectors including differential pressure operating limits. The dust collectors operate in response to process demand.

The following differential pressure operating data for the dust collectors serving Mod 2 and Mod 3 were reviewed.

--	--	--	--	--	--	--

Dust Collector	Collector ID	Target pressure drop range (inches water column)	Jan 13, 2022	Aug 13, 2021	April 13, 2020	Sept 8, 2022
MOD2 East	DV102762259	0.1 < pressure drop < 7.0	>2.0, <3.5	>1.0, <3.5	>0.5, <3.0	>0.1, <4.5
MOD2 West	DV102768932	0.1 < pressure drop < 7.0	Not operating	>1.0, <3.5	>0.5, <1.5	Not operating
MOD3 East	DV102752645	0.1 < pressure drop < 7.0	>3.0, <4.0	>2.5, <4.0	Not operating	>3.0, <4.0
MOD3 West	DV102764297	0.1 < pressure drop < 7.0	>0.5, <2.5	>0.1, <2.0	>0.5, <2.5	>1.0, <2.5

The dust collectors have scheduled filter cartridge changes annually. Review of 2021 and 2022 records indicate the facility completed dust filter cartridge changes and have 2023 scheduled.

IV. Design/Equipment Parameters

MOD2 dust collectors pressure drop gauges were installed and appeared to be operating correctly.

V. Testing/Sampling

The PTI does not contain any Special Conditions for testing or sampling requirements.

VI. Monitoring/Recordkeeping

Review of maintained records indicate the facility is in compliance with recordkeeping and monitoring requirements. A general flow diagram of data flow for emission records is attached.

The site SAP tracks production for each product for monthly inventory. SAP products values are converted to pounds and sorted by emission unit. The production information is imported into environmental records (ERD). ERD loads production values, maintains emissions by product, calculates pounds emitted by product and emission unit. Pounds of Product Family are summed. Pounds of product made and modeling based on Emission Master generate emissions.

While on site I reviewed details of the data collection and records maintained for the August 2021 emissions reported for AUB301 D5 siloxane (decamethylcyclopentasiloxane). Emissions are based on the pounds of each product made monthly in AUB301. All chemicals potentially emitted from the process are tracked and tagged by a category (VOC, particulate, HAP, TAC). Emissions from AUB301 production of D5 were last updated on April 30, 2021.

VII, VIII, IX.

The PTI does not contain any Special Conditions for Reporting, Stack/Vent restriction(s), or Other Requirements

NAME

Kathy Brewer

DATE

9/27/2022

SUPERVISOR

Chris Stone