

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

P102749369

FACILITY: DDP Specialty Electronic Materials US, Inc.		SRN / ID: P1027
LOCATION: 633 Washington Street, MIDLAND		DISTRICT: Saginaw Bay
CITY: MIDLAND		COUNTY: MIDLAND
CONTACT: Sara Bennett , Environmental, Health, & Safety Specialist		ACTIVITY DATE: 06/26/2019
STAFF: Kathy Brewer	COMPLIANCE STATUS: Compliance	SOURCE CLASS: MEGASITE
SUBJECT: EUANION_XCHG and EURESINDRYER		
RESOLVED COMPLAINTS:		

**EUANION\_XCHG and EURESIN\_DRYER**

DDP Contact: Sara Bennett, Environment, Health, and Safety Specialist

EUANION\_XCHG is Anion and some batch Special resins process train and recovery units. EURESIN\_DRYER is a crude resin dryer used in conjunction with the resin manufacturing process. The ownership of EUANION\_XCHG and EURESIN\_DRYER assets were recently transferred from Dow Chemical to DDP.

Both EU's are subject to the MON (40 CFR Part 63, Subpart FFFF. By virtue of being subject to Subpart FFFF, the emission units are also subject to the equipment leak provisions of 40 CFR Part 63, Subpart H.

EUANION\_XCHG is subject to OLD MACT (40 CFR Part 63, Subpart EEEE) and is a CAM subject emission unit subject to the requirements of 40 CFR Part 64. The CAM subject pollutant for EUANION\_XCHG is VOC.

Based on the site visit and records review the facility appears to be in compliance with the ROP Special conditions for EUANION\_XCHG and EURESIN\_DRYER.

On site records review

12 month rolling emission records and calculations  
January 5, 2018, October 5, 2018, March 5, 2019 and June 26, 2019  
Scrubber 1-4 liquid flow rates  
Scrubber 5A and 5B reservoir liquid levels  
963THROX temperatures  
2019 Scrubber 1-4 liquid flow meter calibrations  
May 2019 paraformaldehyde pneumatic conveying system maintenance

AQD File review

March 2018, September 2018, March 2019  
Annual and semi annual ROP Deviation reports  
Annual and semi annual CAM reports  
40 CFR Part 63 Subpart H Semi annual reports  
40 CFR Part 63 Subpart FFFF Semi Annual Reports  
Release reports 2017- present  
July 1, 2015 Voluntary Environmental Audit Disclosure  
MAERS 2018 emissions

EUANION\_XCHG

This emission unit was permitted in PTI 233-74I issued in October 2003

Raw materials are received from totes/cartons, drums, tanker trucks, railcar, and pipeline. There are 3 process trains. Raw material fed into reaction vessels. Multiple rinses of reacted resins with organic wash/organic water wash/water. Liquid streams from washes are set to distillation columns where organics and HCL are recovered. Wastewater sent to Dow WWTP. Packaging of final product occurs after drying.

Reaction vessels and distillation columns may have condensers for material recovery back to reaction or to storage. Paraform received by railcar. Organic and HCL recovery are for reuse in process.

Process activities are vented to a scrubber dependent upon pollutants. Material handling, reaction vessels and distillation columns vents are sent to scrubber 3 or scrubber 1 and 2. Wash tanks and fresh methanol vents are sent to scrubber 4, Catalyst load hopper is sent to scrubber 5A or 5B.

Vents exhausted to Scrubber 1 or 3 are connected and circulate exhaust and or effluent between scrubber 1, 2, or as described in the ROP language. Scrubber 2 only receives exhaust from Scrubber 1 and exhausts to the 963Throx which is now a DDP asset.

Scrubber 3 removes amines. The Scrubber 3 exhaust vents to Scrubber 1. Scrubber 1 removes acids. The Scrubber 1 exhaust vents to Scrubber 2. Scrubber 2 exhausts to the 963 Throx (See attached diagram)

Scrubber 4 and Scrubber 5 vent to the atmosphere. Some vents from the special resins process can vent directly to 963throx/scrubber 6 (963Throx scrubber).

Emissions reported to MAERS for 2018 were

Pollutant	Reported emissions	Basis
VOC	2400 LBS	Other
PM10, Primary	160 LBS	Other
STYRENE	0 LBS	Other

No attachment with supporting documentation was provided. I explained that in the future for emission basis reported as "Other" we may request documentation of the emission basis.

A 2016 Environmental Audit of EUANION\_XCHG assessed vent emissions and reported no findings. A 2015 site-wide audit of MAERS emission factors was conducted comparing reported emission to emissions calculated for compliance determinations. The EUANION\_XCHG calculations were not listed as one of the items that needed to have MAERs values updated after the audit was completed.

**Emission limits**

Records reviewed indicate the facility is in compliance with the following emission limits

Pollutant	Limit TPY VOC (12 month rolling average)	January 2018 (12 month rolling average)	October 2018 (12 month rolling average)	March 2019 (12 month rolling average)
vented to 963THROX	N/A	1.18	1.10	1.17
Special Resins ( Scrubber 4)	N/A	0.1	0.1	0.1
SC I.2 Total VOC	2.6	1.28	1.20	1.27

**Material limits**

The ROP does not contain any specified material limits

**Process/Operational Restrictions**

SC III.1 prohibits the facility from operating the portion of the process exhausted to scrubber 4 unless the scrubber hourly average minimum flow rate of 45 gpm is maintained. A review of scrubber 4 operating flows found all values to be above 45 gpm.

Date	Scrubber 4 flow rate (instantaneous)	Time
Jan 5, 2018	47	10:40 AM
Oct 5, 2018	54	7:41 PM
March 5, 2019	55	2:46 PM
June 26, 2019	58	9:44 AM
June 26, 2019	59 (AI332E)	1:30 PM

SC III.1 also limits the operation of the process steps of EUANION\_XCHG exhausted to Scrubber 4 unless the scrubber is installed, maintained, and operated in a satisfactory manner. EUANION\_XCHNG Scrubber 4 has a pre alarm at <50 gpm for more than 30 seconds. Auto action alarm at <46 gpm for more than 30 seconds.

SC III.2 prohibits the facility from operating the portion of the process exhausted to scrubber 1, scrubber 2, and scrubber 3 unless the scrubber flow rates listed below are maintained. A review of scrubber 1, scrubber 2, and scrubber 3 operating flows found all values to be above the minimum required.

Device	Parameter & minimum condition	Jan 5, 2018	Oct 5, 2018	Mar 5, 2019	June 26, 2019 (instantaneous operating data)	June 26, 2019 (instantaneous control room @ 3:45 PM)
Scrubber 1 SC III.2	gpm flow, min 90	133	133	133	134	129.6 (AI 633B)

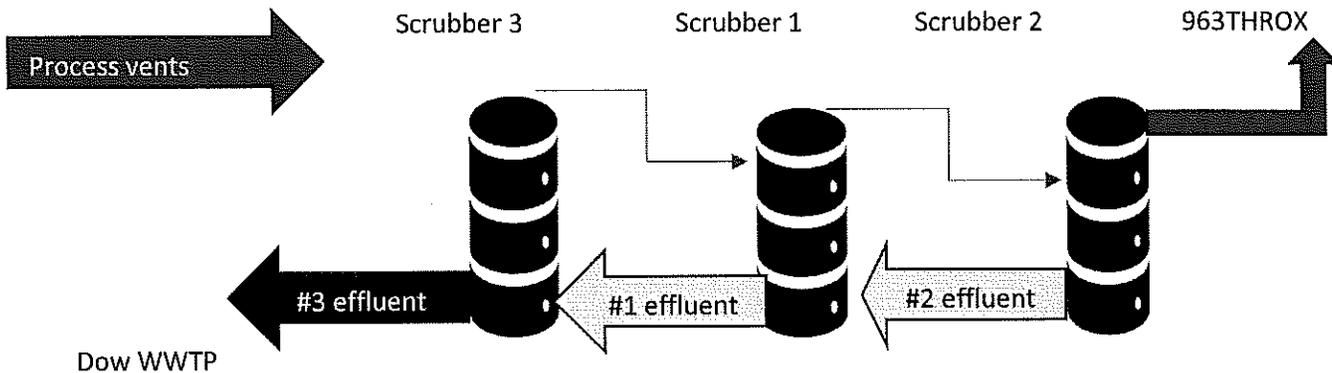
# EU ANION\_XCHG SCRUBBER DESCRIPTION

Process activities are vented to a scrubber dependent upon pollutants. Material handling, reaction vessels and distillation columns vents are sent to scrubber 3 or scrubber 1 and 2. Wash tanks and fresh methanol vents are sent to scrubber 4, Catalyst load hopper is sent to scrubber 5A or 5B.

Vents exhausted to Scrubber 1 or 3 are connected and circulate exhaust and or effluent between scrubber 1, 2, or as described in the ROP language. Scrubber 2 only receives exhaust from Scrubber 1 and exhausts to the 963Throx which is now a DDP asset.

Scrubber 3 removes amines. The Scrubber 3 exhaust vents to Scrubber 1. Scrubber 1 removes acids. The Scrubber 1 exhaust vents to Scrubber 2. Scrubber 2 exhausts to the 963 Throx

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Scrubber 4 and Scrubber 5 vent to the atmosphere. Some vents from the special resins process can vent directly to 963throx/scrubber 6 (963Throx scrubber).

Emissions reported to MAERS for 2018 were

Pollutant	Reported emissions	Basis
VOC	2400 LBS	Other
PM10, Primary	160 LBS	Other
STYRENE	0 LBS	Other

No attachment with supporting documentation was provided. I explained that in the future for emission basis reported as "Other" we may request documentation of the emission basis.

A 2016 Environmental Audit of EUANION\_XCHG assessed vent emissions and reported no findings. A 2015 site-wide audit of MAERS emission factors was conducted comparing reported emission to emissions calculated for compliance determinations. The EUANION\_XCHG calculations were not listed as one of the items that needed to have MAERs values updated after the audit was completed.

### Emission limits

Records reviewed indicate the facility is in compliance with the following emission limits

Pollutant	Limit TPY VOC	January 2018	October 2018	March 2019

Scrubber 2 SC III.2	gpm flow, min 45	80	80	80	81	80 (AI 634B)
Scrubber 3 SC III.2	gpm flow, min 25	38	39	39	33	33 (AI 637B)

Operation records with flow metering value for scrubbers 1-3 are attached except for January 5 is raw data from 10:30 -11:30 AM.

SC III.2 also prohibits the facility from operating the portion of the process exhausted to scrubber 5A and scrubber 5B unless a minimum level of 5 inches of water is maintained in each scrubber reservoir when Scrubber 5A and 5B are in use. A review of scrubber 5A and scrubber 5B scrubber reservoir levels found all values to be above the minimum required.

Device	Parameter & minimum condition	Jan 5, 2018	Oct 5, 2018	Mar 5, 2019	June 26, 2019 (instantaneous)	June 26, 2019 (instantaneous control room @ 1:30 PM)
Scrubber 5 A SC III.2	Reservoir H2O level, min 5 inches (1 hour average)	>6	>6.5	>6.5	>6.5	6.8 (AI 222)
Scrubber 5 B SC III.2	Reservoir H2O level, min 5 inches (1 hour average)	>6.5	>6.5	>6.5	>6.5	6.9 (AI 724)

Operation records with reservoir water level values for scrubbers 5A and 5B are attached except for January 5 is raw data from 10:30 -11:30 AM.

**The ROP for EUANION\_XCHG contains no specified Design/Equipment or Testing/Sampling special conditions**

#### Monitor/Recordkeeping

SC VI.1 requires monitoring and recording scrubber 4 liquid flow rate. Operation records with flow metering value for scrubber 4 are attached except for January 5 is raw data from 10:30 -11:30 AM.

SC VI.2 and 3 requires monitoring and recording scrubbers 1, 2 and 3 liquid flow rate. Operation records with flow metering value for scrubbers 1, 2 and 3 are attached except for January 5 is raw data from 10:30 -11:30 AM. A copy of May 2019 calibrations for each of scrubbers 1-3 flow meters are attached.

SC VI.4 requires monitoring and recording liquid level of scrubber 5A and 5B reservoirs. Operation records with liquid level of scrubber 5A and 5B reservoirs are attached except for January 5 is raw data from 10:30 -11:30 AM.

SC VI .5 requires the permittee to keep records of maintenance and/or inspection records for the pneumatic conveying system used to transfer paraformaldehyde. The paraformaldehyde is conveyed in a continuous manner from each railcar into the paraformaldehyde hopper then fed into reaction vessel as batch demands. The May 2019 inspection records for the pneumatic conveying system used for the transfer of paraformaldehyde are attached.

SC VI.6 requires the permittee to keep monthly emission calculations to demonstrate compliance with emission limits. For determining ongoing compliance, the facility uses the values from the most recent PTI application (2003) for emission constants. The constants used are based on emissions per operating day (attached). The ROP Appendix 7 has specific calculations for the emissions from EUANION\_XCHG. For Scrubber 4 the facility now uses emission values from a 2012 stack test conducted to show compliance with CAM. Emissions exhausted from scrubber 2 are vented to the 963THROX/scrubber 6 vent SVEG9201. The reduction efficiency from 963THROX/scrubber 6 is applied to the scrubber 2 emissions. The facility calculates the emissions from scrubber 2 vented to the 963THROX and scrubber 4 vented to SVEG9202. Constants used for determining emissions attached.

The calculated emissions for the 12 month rolling average VOCs for the January 2018, October 2018, and March 2018 are attached. Records reviewed indicate the facility is in compliance with the emission limits.

#### Reporting

A review of the ROP Deviation reports from September 2017 through March 2019 found reports of one sampling valve subject to LDAR monitoring inspected within 6 days of repairing a leak instead of 5 days. No leak found at the 6<sup>th</sup> day leak inspection. The late LDAR monitoring was also included in the 40CFR MON MACT report.

For the same time period the facility reported 7 short duration releases of chloromethyl ether (CMME due to a rupture disk failure, two separate flange leaks, two separate valve leaks, a leak from a pump, and a leak from a process vessel. All were responded to, including shutdown of the process and completing equipment repairs.

The 40CFR Part 63 Subpart FFFF (MON) reports between April 2017 and December 2018 showed 0% to 0.1% valve and agitator leaks detected and a sensory leak from a pump. One pump and three connectors with detected leaks were placed on Delay of Repairs for 3,6,7, and 12 days respectively.

No other Deviations or CAM excursion, exceedances, or monitoring downtime were reported.

### Stack/Vent Restrictions

The following descriptions were provided during the inspection:

Stack & Vent ID	Maximum Exhaust Dimensions (inches)	Minimum Height Above Ground (feet)	Underlying Applicable Requirements
1. SVEG9202	12 <sup>1</sup>	77 <sup>1</sup>	Scrubber 4
2. SVEG9204A	6 <sup>1</sup>	66 <sup>1</sup>	Scrubber 5A
3. SVEG9204B	10 <sup>1</sup>	95 <sup>1</sup>	Scrubber 5B
4. SVEG9205A	2 <sup>1</sup>	74 <sup>1</sup>	Solids conveying system
5. SVEG9205B	2 <sup>1</sup>	74 <sup>1</sup>	Solids conveying system
6. SVEG9205C	2 <sup>1</sup>	88 <sup>1</sup>	Solids conveying system
SVEG9204A, SVEG9204B, SVEG9205A, SVEG9205B & SVEG9205C have a horizontal vent orientation.			

SC IX.1 prohibits operation of EUANION\_XCHG process steps exhausted to the 963THROX unless the emissions are ducted to 963THROS/scrubber 6. A review of 963THROX operating temperatures for showed the 963THROX was operating during periods that EUANION\_XCHG was operating. The January 5, 2018, October 5, 2018, March 5, 2019, and June 26, 2019 963THROX operating temperature are attached.

SC IX. 2 prohibits the operation of the pneumatic conveying system for paraformaldehyde unless the closed nitrogen system is installed, maintained and operated in a satisfactory manner. The paraformaldehyde railcar unloading procedure for operators is a critical procedure. The procedure instructs the operators to verify the nitrogen purge recycle and the closed loop system are operating. PM in place for ongoing maintenance.

SC IX.3 requires equipping and maintain a liquid flow indicator at scrubber 4. Records review and on site observation indicate the liquid flow meter is installed and maintained. A copy of a May 1, 2019 meter calibration for scrubber 4 flow meter is attached.

SCIX.4 requires equipping and maintain a liquid flow indicator at scrubbers 1, 2, and 3. Records review and on site observation indicate the liquid flow meters are installed and maintained. A copy of a May 2019 meter calibrations for scrubber 1,2 and 3 flow meters are attached.

SC IX.5 requires equipping and maintain a liquid level indicator at scrubbers 5A and 5B reservoirs. Records review and on site observation indicate the liquid level indicators are installed and maintained.

### EURESIN DRYER

Resin is manually added to the dryer, screened and sent to a reactor in the resin manufacturing process. Equipment is located in the 458 building. Dryer is operated as batch process determined by demand. Raw product is from EU89. Fine mesh copolymer fed into air dryer that is heated by noncontact steam/radiator. There are filters on drying operation. Dryer vents to atmosphere.

This emission unit was permitted in PTI 570-93A issued in October 2003

Emissions reported to MAERS for 2018 were

Pollutant	Reported emissions	Basis
VOC	64LBS	Other
STYRENE	64 LBS	Other

Per the attachment submitted with the MAERS report, the facility uses an average value of 0.1263 lbs/hr VOC emissions based on sampling of the dryer.

**Emission limits**

Records reviewed indicate the facility is in compliance with the following emission limits

Pollutant	Limit (12 month rolling average)	January 2018 (12 month rolling average)	October 2018 (12 month rolling average)	March 2019 (12 month rolling average)
SC 1.2 Styrene	0.6 tpy	0.03	0.04	0.06

**Material limits**

The ROP does not contain any specified material limits

**Process/Operational restrictions**

The ROP does not contain any specified process/operational restrictions.

**Design/Equipment parameters**

The ROP does not contain any specified design/equipment parameter limits.

**Testing/Sampling**

The ROP does not contain any specified testing or sampling.

**Monitor/Recordkeeping**

SC VI.1 requires the permittee to keep monthly emission calculations to demonstrate compliance with emission limits. For determining ongoing compliance, the facility uses the values from the most recent PTI application (2003) for emission constants.

The calculations use the total batches sent to the dryer per month multiple by the determined styrene emissions/batch. Example from March 2019 for VOC emissions is attached. The calculated emissions for the 12 month rolling average VOCs for the January 2018, October 2018, and March 2019 are attached. Records reviewed indicate the facility is in compliance with the emission limits.

**Reporting**

A review of the ROP Deviation reports from September 2017 through March 2019 found no reported deviations.

Per a July 15, 2019 email from DDP, in the reports for 40 CFR PART 63 Subpart FFFF (MON), EURESIN\_Dryer is covered under the same MCPU as EUANION\_XCHG which includes the Special Resins and Fine Mesh processes. The Resin Dryer is included in the 963 Bldg MON NOCS as an exempt batch vent under "SR – Fluid Bed Dryer" and "Anion FM – Dryer". The EURESIN\_DRYER was inadvertently left off of the list of Emission Units in the MON report, even though the equipment has been accounted for.

**Stack/Vent Restrictions**

The following description was provided during the inspection:

Stack & Vent ID	Maximum Exhaust Dimensions (inches)	Minimum Height Above Ground (feet)	Description
1. SV92013	14 x 16	8	Dryer vent

NAME KAB

DATE 7/15/2019

SUPERVISOR C. Hare