

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

P102770582

FACILITY: DDP Specialty Electronic Materials US, LLC		SRN / ID: P1027
LOCATION: 3400 S. Saginaw Rd Unit 96, MIDLAND		DISTRICT: Bay City
CITY: MIDLAND		COUNTY: MIDLAND
CONTACT: Alyssa McGibbon , Environmental and sustainability specialist		ACTIVITY DATE: 01/17/2024
STAFF: Kathy Brewer	COMPLIANCE STATUS: Compliance	SOURCE CLASS: MEGASITE
SUBJECT: EUB2 Methocel on site inspection, records review		
RESOLVED COMPLAINTS:		

EUB2 IFF/ N&B Inspection January 17, 2024**IFF Contact Alyssa McGibbon**

EUB2 is the Methocel cellulose derivative production plant. The process uses reactors, separators, dryers, storage tanks/silos, and related equipment. The process uses vent recovery for the majority of process vent VOCs. Process vents can also exhaust to a thermal treatment unit (954THROX owned by DuPont). Throughout the production, finishing, and materials handling activities emissions are also controlled by scrubbers, and baghouses.

EUB2 was permitted in PTI 7-04A issued in 2006. This emission unit is subject to the requirements of 40 CFR Part 63, Subparts A, H, EEEE, and UUUU.

EUB2 is a CAM subject emission unit subject to the requirements of 40 CFR Part 64. The CAM subject pollutants for this emission unit are VOC and PM-10

The facility reported the following throughput and emissions for 2022 in MAERS for EUB2:

- 12506 ton throughput
- MAERS emissions VOC 73,622 lbs, PM 14,739 lbs

During the January 17, 2024 on site walk through of the process, emission control devices and associated metering devices, vents, material handling areas and real time operations screens were viewed. Process overviews, emission locations, and emission calculations including example monthly production for monthly and 12 month rolling materials and emission limit compliance records were reviewed as well as on site records for emissions. Process and control device status and operating parameters records were also provided .

At the time of the inspection the facility appeared to be in compliance with the requirements of the EUB2 ROP conditions.

On Site Records Review

Scrubber T-1001 liquid flow rate

Scrubber T-1975 liquid flow rate

VGRS condensers exit gas temperature

Secondary inline filter for SVB2020, (DC-1830A) differential pressure

SVB2026, (DC-1930) differential pressure

SVB2063, (DC-5841) differential pressure

SVB2015 (DC-401) Visible Emission observations

SVB2010 (South dryer Scrubber 4) Visible Emission observations

Control device instrumentation calibration records

Additional records provided via email:

963THROX Scrubber T-3602 liquid flow rate, pH

AQD File Review

MAERS 2022

ROP Semi annual Deviation Sept 2022, March 2023
 CAM exceedance & excursion reports Sept 2022, March 2023
 MACT Reports Subpart H Sept 2022, March 2023.
 MACT Reports Subpart UUUU Sept 2022, March 2023.

Description

The Methocel process involves storage and unloading of raw materials, grinding, mixing and reaction of raw materials, slurring, filtering, washing, drying, milling, and final product packaging and storage. The process operates 24 hours/day, 7 days /week.

The process uses a vapor recovery system for condensing and recovering most VOCs. The 963THROX owned by Dupont receives vent exhaust for unrecovered VOCs. A liquid waste stream treatment system includes a stripper and condenser to collect additional VOCs for disposal. Five scrubbers, a rail car vapor balance system, and over a dozen baghouse or baghouse and filters are used for process emission control. There are 28 vents/stacks listed in the ROP and 35 vents listed in PTI application as exempt from permitting.

The Low BTU and High BTU vent lines to 954THROX have not been used since 2013.

Emissions

Emission calculations are based on production values including amount of each material used per batch, equipment or process step temperatures and pressures. The emission factors established for tracked pollutants from production steps include filling and ventdown losses, thermal expansion, breathing and purge losses, and pollution control device efficiencies.

The records reviewed indicate the facility is compliance with the following permitted EUB2 emission limits.

Pollutant	Limit	February 2022 Tons	June 2023 Tons	November 2023 Tons	Associated stacks/vents
Methyl Chloride	SC I.5 10 tpy	3.71	3.06	2.74	SVB2029; SVB2007, SVB2009, SVB2010; SVB2008
Propylene Oxide	SC I.6 2 tpy	0.75	0.6	0.5	SVB2029; SVB2007, SVB2009, SVB2010; SVB2008
Propylene Glycol Dimethyl Ether	SC I.7 1.7 tpy	0.39	0.2	0.2	SVB2029; SVB2007, SVB2009, SVB2010; SVB2008
VOC	SC I.8 78 tpy	37.75	29.1	26.0	SVB2029; SVB2007, SVB2009, SVB2010; SVB2008

Material limits

The ROP does not list any specified material limits.

Process/Operational limits

The Low BTU and High BTU vent lines to 954THROX have not been used since 2013. The records reviewed indicate the facility is compliance with the following process or operational requirements.

	Feb 21, 2022	June 1, 2023	November 21, 2023	January 17, 2024	Comment
SC.III.1. 963THROX (lower of two monitors)	783 C 8:40 AM	764 C 2:10 PM	788 C 9:10 PM		
SC.III.2 T-1001 scrubber flow 42 gpm ID= FT 16019	8-10 AM ~60 gpm 2 hr avg	4 - 8 PM (Both trains down 1 -7 PM) 48 gpm at 6 PM (daily average also 48 gpm)	8-10 PM ~55 gpm 2 hr avg	10:30 AM 55 gpm	
SC.III.2 T-1001 scrubber flow 42 gpm Train 1 (South) status ** Denoted by FT 6062	8-10 AM ~35 gpm 2 hr avg	4 - 8 PM ~ 34 gpm at 6 PM	8-10 PM ~32 gpm 2 hr avg	10:30 AM zero gpm	
SC.III.2 T-1001 scrubber flow 42 gpm Train 2 (North) status ** Denoted by FT 6038	8-10 AM ~32 gpm 2 hr avg	4 -8 PM Zero (North Train down)	8-10 AM ~30 gpm 2 hr avg	10:30 AM 40 gpm	
SC.III 3. Scrubber T-1975 10 gpm ID= FT 2045	8:25 AM 12.8 gpm	1-3 PM ~12.4 gpm 2 hr avg	Nov 19, 2023 8 - 10 PM ~12.3 gpm	10 AM – noon ~ 12.4 2 hr avg	

			2 hr avg		
SC. II.4. Condenser exit temperature 40 C (E-107) ID= TT 614025	8 – 10 AM zero 2 hr avg	1-3 PM ~ 31 C 2 hr avg	Nov 19, 2023 8 - 10 PM zero 2 hr avg Brief peak to ~25 at 10 PM	11:00 AM ~ -7 C	
SC. III.5. dP Max 200" H2O DC-1830A (FL-1830 DP) ID = PDT 71010	1-3 PM 8.2 to 8.5	5 – 7 PM 4.9 to 5.1	8 - 10 PM 3.8 to 5.8	10 AM to noon 0.06 to 0.14	
SC. III.5. dP Max 200" H2O DC-1930 (FL-1930A DP) ID = DPT 78410	4 AM ~8.3	5 – 7 PM 6.7 to 7.6	8 - 10 AM 8.5 to 8.8	10 AM to noon Zero/ off	
dP Max 15" H2O DC-5841 ID = PDT 584025	2 – 8 AM zero	Jul 13, 2023 5 – 7 PM zero	10 PM to midnight Zero (<0.07)	10 AM to noon Zero	

Design and Equipment Parameters

SC IV.1 permits operation of the portions of the cellulose derivative process that are vented to the scrubbers and baghouses if the scrubbers and baghouses are installed and operating properly. On site inspection and records review indicate the scrubbers and baghouses receive process vents only when they are installed and operating properly.

SC IV.2. permits operation of the rail car loading station if the vapor balance system is installed and operated in a satisfactory manner. On site inspection and review of operating procedures indicate compliance with this requirement.

Testing/Sampling

The ROP does not list specific testing requirements. An initial test for PM emissions was required for SVB2014, SVB2015, SVB2016, SVB2020, SVB2021, SVB2026, SVB2034, SVB2035, SVB2043, SVB2044, SVB2057, SVB2058, SVB2061, and SVB20163. The test was completed on August 3, 2011.

Monitoring and Recordkeeping

SC VI.1., 4. Operational records and instrument calibrations were reviewed for Scrubber T-1975. Historical operating records for February 21, 2022, June 1, 2023, and November 21, 2023 are attached.

SC VI.2., 3. Operational records and instrument calibrations were reviewed for Scrubber T-1001 and VGRS condenser E-107. Historical operating records for February 21, 2022, June 1, 2023, and November 21, 2023 are attached.

The Calibration and Maintenance Plan was provided that contains scheduled calibration frequency for equipment instrumentation associated with the ROP monitoring requirements.

SC VI. 5. Details of monthly batch totals were reviewed for February 2022, July 2023, and November 2023.

Month	February 21, 2022	June 1, 2023	November 21, 2023
Number of batches	325	303	318
Product types	4	5	4

The records reviewed indicate the facility is compliance with the ROP requirement.

SC VI.6 The site tracks pounds of Methocel produced and the pounds of the following raw materials: Pulp, NaOH, MeCl, Propylene Oxide. Emission tracking for February 2022, July 2023, and November 2023 were reviewed. Details of November 2023 inputs for methyl chloride and calculations were reviewed. The following monthly methyl chloride values used for November 12 month rolling average are below.

Month	Dec 2022	Jan 2023	Feb 2023	Mar 2023	Apr 2023	May 2023	Jun 2023	Jul 2023	Aug 2023	Sep 2023	Oct 2023	Nov 2023
Methyl Chloride Emissions (Tons)	0.16	0.20	0.21	0.15	0.23	0.18	0.29	0.31	0.27	0.22	0.21	0.30

The records reviewed indicate the facility is compliance with the requirement.

SC VI.8. A plan identifying parameters and operations at FG963THROX used to demonstrate compliance with the 99.9% destruction efficiency for organics compounds vented to 963THROX from EUB2 has been submitted to the AQD Bay City District Supervisor and is on file at the facility.

SC VI.9 Quarterly visible emission checks of particulate control device stacks venting to SVB2004, SVB2005a, SVB2005b, SVB2007, SVB2009, SVB2010, SVB2029, SVB2055, SVB2059, and SVB2060 during routine operating conditions are required. VE records for SVB2010 were reviewed. VE readings were conducted. No VE's were noted during those inspections.

SC VI.10., 12. Daily visible emission checks of particulate control device stacks venting to SVB2014, SVB2015, SVB2016, SVB2057, SVB2058, and SVB2061 during routine operating conditions are required. Daily VE records for SVB2015 were reviewed. VE readings are conducted daily and tracked electronically. No VE's were noted during those inspections.

SC VI.11. Monitoring and recording of the daily pressure drop across the secondary inline filter associated with Vent Nos. SVB2020, SVB2021, SVB2026, SVB2044, and SVB2063 is required. Historical operating records for February 21, 2022, June 1, 2023, and November 21, 2023 are attached. The records reviewed indicate the facility is compliance with the requirement.

Stack & Vent ID	Description	Monitoring required	CAM Subject Pollutant	Special Condition
1. SVB2004		Quarterly VE		SC VI.9
2. SVB2005a	Blowdown tanks to atmosphere, no control, residual VOCs	Quarterly VE		SC VI.9
3. SVB2005b	Blowdown tanks to atmosphere, no control, residual VOCs	Quarterly VE		SC VI.9
5. SVB2007	North train dryer wet scrubber	Quarterly VE		SC VI.9
4. SVB2008	T-1001 scrubber	Scrubber flow 44/22 GPM	VOC, PM	SC III.2
5. SVB2009	South train flash dryer Wet scrubber	Quarterly VE		SC VI.9
6. SVB2010	South train tumble dryer wet scrubber	Quarterly VE		SC VI.9
7. SVB2014	Mill baghouse	Daily VE/Stack Test	PM	SC I.9, SC VI.10, SC V.2
8. SVB2015	Mill baghouse	Daily VE/Stack Test	PM	SC I.9, SC VI.10, SC V.2

Stack & Vent ID	Description	Monitoring required	CAM Subject Pollutant	Special Condition
9. SVB2016	Mill baghouse	Daily VE/Stack Test	PM	SC I.9, SC VI.10, SC V.2
10. SVB2020	Homogenizing unit baghouse	dP <200 in. W.C./Stack Test	PM	SC I.9, SC III.5., SC V.2, SC VI.11.
11. SVB2021	Homogenizing unit baghouse	dP <200 in. W.C./Stack Test	PM	SC I.9, SC III.5., SC V.2, SC VI.11.
12. SVB2026	Low viscosity baghouse	dP <200 in. W.C./Stack Test	PM	SC I.9, SC III.5., SC V.2, SC VI.11.
13. SVB2029	Low viscosity water scrubber	Scrubber flow 10 GPM, Quarterly VE		SC III.3, SC VI.9
14. SVB2034		Stack Test		SC I.9, SC V.2
15. SVB2035		Stack Test		SC I.9, SC V.2
16. SVB2043		Stack Test		SC I.9, SC V.2
17. SVB2044	Homogenizing unit baghouse	dP <200 in. W.C./Stack Test	PM	SC I.9, SC III.5., SC V.2, SC VI.11.
18. SV963THROX		NOT EVALUATED		
19. SVB2055		Quarterly VE		SC VI.9
20. SVB2057		Daily VE/Stack Test	PM	SC I.9, SC VI.10, SC V.2
21. SVB2058	Mill	Daily VE/Stack Test	PM	SC I.9, SC VI.10, SC V.2
22. SVB2059		Quarterly VE		SC VI.9
23. SVB2060		Quarterly VE		SC VI.9

Stack & Vent ID	Description	Monitoring required	CAM Subject Pollutant	Special Condition
24. SVB2061		Daily VE/Stack Test	PM	SC I.9, SC VI.10, SC V.2
25. SVB2063		dp <200 in. W.C./Stack Test	PM	SC I.9, SC III.5., SC V.2, SC VI.11.

CAM monitoring

Per the facility, vents with particulate control devices that are subject to CAM, and do not have trash filters and differential pressure monitors, are subject to daily visible emission checks. Vents with particulate control devices that are subject to CAM and also have trash filters and differential pressure monitors are monitored per permit with differential pressure requirements. Vents that are subject to quarterly visible emission monitoring are associated with water scrubbers and are not a CAM regulated vents.

Deviation and MACT reports review

No Deviations reported March 2023 ROP

In Sept 2022 ROP Deviation report a packaging line rupture was reported but not considered deviation.

No CAM exceedances or excursions Sept 2022, March 2023

No MACT H or UUUU deviations or exceedances Sept 2022, March 2023

NAME  DATE 3/25/2024 SUPERVISOR 