

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

E456935436

FACILITY: Arkema, Inc.		SRN / ID: E4569
LOCATION: 1415 Steele Avenue, S.W., GRAND RAPIDS		DISTRICT: Grand Rapids
CITY: GRAND RAPIDS		COUNTY: KENT
CONTACT: Pat Harig , EH and S		ACTIVITY DATE: 07/08/2016
STAFF: David Morgan	COMPLIANCE STATUS: Compliance	SOURCE CLASS: SM OPT OUT
SUBJECT:		
RESOLVED COMPLAINTS:		

At 1:10 P.M. on July 8, 2016, Air Quality Division (AQD) staff Dave Morgan conducted an unannounced scheduled inspection of Arkema Coating Resins at 1415 Steele Avenue SW in Grand Rapids. The purpose of the inspection was to determine the facility's compliance with Permit to Install No. 100-07A and state and federal air pollution regulations. Accompanying AQD staff on the inspection was Linda Bolten, Senior Plant Engineer; Glenn Preisler, Interim Plant Manager; and Pat Harig, Environmental Health and Safety Coordinator. A DEQ Inspection Brochure was presented at the beginning of the inspection.

FACILITY DESCRIPTION

Arkema manufactures synthetic organic resins/polymers and dispersions for use as a component in paints and coatings. Their products are commonly used in architectural and industrial coatings applied on the outside of beverage cans and appliances, as well as a variety of other products. The resin manufacturing process entails the charging of powdered raw materials and liquid (including solvents) into one of four reactor kettles. The materials are heated in the reactors to form a polymer. Once the desired specifications are met, the reaction is terminated and the material is transferred to thinning tanks where additional solvent is added to meet final specifications. Final product is then transferred to bulk storage tanks, tanker truck, or drums. Air pollution control equipment includes scrubbers, condensers, and a thermal oxidizer (TO). The facility operates up to 7 days a week, 24 hours a day. The facility is a synthetic minor source for volatile organic compounds (VOCs) and hazardous air pollutants (HAPs).

COMPLIANCE EVALUATION

FGRESINPROD:

This flexible group contains most of the equipment at the site. Generally, four similar systems are used to produce the facility's output. Four kettles (#1 - 1100 gal, #2 - 500 gal, #3 - 800 gal, #4 - 2300 gal), four condensers, four scrubbers, four decanters, three packed columns (unit #3 doesn't have a packed column because its oil based, and so doesn't use as much glycol), and one large blend tank that can be used with all four kettles. The packed column is process equipment that recaptures glycol that evaporates from the glycol/acid reaction in the kettle. Water is also a byproduct of this reaction but must be removed with the condensers and decanters. Most solvent is used in the thinning tanks and in equipment cleanup. The TO and scrubbers control VOC and particulate emissions. The scrubber controls are used only during charging of materials. Cleaning is performed by running a mixture of aromatic solvents through the equipment.

Building 7 contains the dispersion/emulsion process; no reactions occur in these tanks only mixing with already reacted resin from the kettles. They were not operating at the time of the inspection. All equipment appeared to be attached to the TO.

Below is an evaluation of PTI No. 100-07A:

Emission limits:

From June 2015 through May 2016:

	Pollutant	Actual	Limit	Limit Met (Y/N/Unknown)	Documented value / Comments
1.1	VOC	NA	18.2 pph	Unknown	Last test was conducted in 2012. Test results then indicated 0.0003 pph.
1.2	VOC	20.86 tons	46.5 tpy	Y	18.57 tpy

Material Usage Limits:

II.1 From June 2015 through May 2016 the company used 8,193,240 lbs of solvent which is below the permit limit

of 12,951,000 lbs of solvent per 12-month rolling time period. For the same period, the company used 1,385,029 lbs of xylene/ethylbenzene which is below the permit limit of 3,600,000 lbs of xylene/ethylbenzene per 12-month rolling time period.

Process/Operational Limits:

III.1 From June 2015 through May 2016 the company processed 31,817,273 lbs of resin which is below the permit limit of 40,000,000 lbs of resin per 12-month rolling time period. For the same time period, the company processed 0 lbs of dispersion which is below the permit limit of 15,000,000 lbs of dispersion per 12-month rolling timer period.

III.2 Malfunction Abatement Plan required

For proper operation of control devices, the facility relies on product specific "manufacturing instructions". For malfunctions, the company has developed an "Integrated Contingency Plan" dated April 2012.

It is noted that from July 2015 to July 2016 the company had shutdown events reportable under Rule 912 as identified below. All Rule 912 requirements were followed and there were no emission exceedances.

Event Date	Cause	Response
7-31-15	pressure on reactor during the process	high temp shutoff triggered
12-5-15	plant-wide power outage	all reactors had heat turned off and cooled
1-10-16	frozen mechanical part on TO	Steam applied to free part
5-25-16	TO mechanical failure	troubleshooting and repair
5-27-16	TO mechanical failure	troubleshooting and repair

Equipment:

IV.1 Packed column scrubber/partial condenser or total condenser must be installed and operating properly. The scrubbers were installed, maintained, and appeared to be operated properly.

IV.2 Thermal oxidizer must be installed and operated. Minimum efficiency of 95 percent and 1500°F temperature. The company operates the TO in a proper manner. A destruction efficiency test was conducted in 2012 in which the destruction efficiency was verified at 95%. At the time of the inspection the temperature was around 1630°F with a flow rate around 3,061cfm. Arkema is maintaining daily temperature records in accordance with the permit using an electronic data logger. The company is also maintaining records of flow and other operating parameters. Records were reviewed on site. No issues were identified. The next preventative maintenance activity on the TO is scheduled for the end of August 2016.

IV.3 Truck loading must be properly controlled with condenser and carbon adsorption with a maximum exit temperature from the condenser at 105°F. A condenser and carbon adsorption system (55 gallon drum with carbon) appeared to be installed properly. No trucks were actively loading at the time of inspection. AQD staff examined several truck loading logs which appeared to appropriately document the exit temperature of the condenser.

Monitoring:

VI.2 Permittee shall monitor flow rate and temperature in the thermal oxidizer. As previously indicated, the flow rate and temperature appeared to be properly monitored. The flow rate required by the permit is calculated based on the size of the pipe and the differential pressure.

VI.3 Permittee shall install a device to monitor the temperature of the loading rack condenser. A proper temperature monitor was installed.

Recordkeeping:

VI.4. Records shall be made available.

Records of solvent usage, batches, production rates, VOC calculations, temperature and flow data for the TO and loading rack data were submitted and/or reviewed on site. (attached)

Stack:

VIII.1 Thermal oxidizer stack must be a maximum of 32 inches in diameter and a minimum of 30.8 feet tall.

The stack appeared to meet required dimensions.

FGFACILITY:

This emission unit covers all equipment, and is necessary to simplify the opt-out language. Records for the period from June 2015 through May 2016 indicate the following:

Emission limits:

	Pollutant	Actual	Limit	Limit Met (Y/N/Unknown)
I.1	HAP	2.45 tons	9.7 tpy (single)	Y
I.2	HAP	5.18 tons	24 tpy (aggregate)	Y

Recordkeeping:

VI.1 Records must be available by last day of following month. Records were immediately available.

VI.2 HAP records were complete.

Boilers / Heaters:

The facility uses a hot oil heater which had its burner changed in 2008, although its still fired with natural gas. Two boilers are used for general heat. The larger boiler is used in the winter and is approximately 14.6 mmbtu/hr. It is exempt from permitting under Rule 282(b) and not subject to the New Source Performance Standard (NSPS), 40 CFR Part 60, Subpart Dc because although the unit was installed at this location in 1996, the unit was originally installed and operated in 1967 prior to the NSPS date of June, 9, 1989.

The smaller boiler (installed 2012) is used when demand is low and is less than 10 mmbtu/hr. It is also exempt from permitting under Rule 282(b) and not subject to the NSPS, Subpart Dc because the unit is less than 10 mmbtu/hr capacity .

A diesel fired fire pump runs for 1/2 hr every week. This unit was installed in 1969.

Miscellaneous:

It is noted that the company is in the process of replacing some process tanks which would not increase the capacity of the process. The company was advised to update PTI No. 100-07A, when possible, to ensure a complete inventory of permitted process equipment. A description of process changes are in AQD files.

EVALUATION SUMMARY

Arkema appears to be in compliance with PTI No. 100-07A as well as all applicable air quality rules and regulations. Attached are records obtained during the inspection.

NAME [Signature] DATE 8/16/16 SUPERVISOR [Signature]