Permit by Rule (PBR) Registration
Technical Review

Company:	Arkema Inc.	**Registration No.:**	179489
Nearest City:	Pasadena	**Project No.:**	390428
County:	Harris	**Project Type:**	Initial
Project Reviewer:	Brittiny Williams	**Regulated Entity No.:**	RN104150123
Unit Name:	Arkema Clear Lake	**Customer Reference No.:**	CN600124044
PBR No(s).:	106.261, 106.262	**Project Received Date:**	March 20, 2025
Physical Location:	9502b Bayport Blvd # B		

Project Overview / Process Description
Arkema, Inc. (Arkema) owns and operates the Clear Lake Plant located in Pasadena, Harris County, Texas. The site is currently authorized under NSR Permit No. 260 and Title V Permit Nos. O1988 and O1987. This project will be incorporated into NSR Permit No. 260 at the next amendment or renewal. This project will not affect the pending NSR amendment project for NSR Permit No. 260.

With this project, Arkema is proposing to authorize the addition of fugitive components associated with various projects completed during a turnaround in 2024 at the Clear Lake Plant under PBR 106.261. This registration will also authorize chemicals under PBR 106.262. There are no upstream or downstream emission increases associated with this PBR. These projects are detailed in the table below:

Project List

Project No.	Project Name	Distance to Nearest Receptor (feet):	Description
1	MOC 4522	1600	Analyzers on both R-62 and R-63 outlets have bubblers (an absorber that removes condensables in the reactor outlet samples). The effluent from these bubblers is joined by the steam condensate from the steam provided to the analyzers and discarded as wastewater. This project serves to separate condensate lines from wastewater and redirect all wastewater back to the reactor quench tower to recover the reactor outlet condensables.
2	MOC 14211	1600	Install equipment to route unplanned reactor shutdowns to thermal oxidizers #3 and #4. The reactor shutdowns result in releases of propylene from the automatic block and bleed systems used to safely secure the reactor. Although the releases are small (approximately 5 pounds or less), by routing the bleed lines to the incinerator, propylene releases to atmosphere are reduced by 99.99%. No unplanned emissions will be authorized with this project. The reactor is not being re-routed to the thermal oxidizers. Instead, block & bleed systems are being captured by routing the bleeds back into a line already routing propylene streams to the thermal oxidizers.
3	MOC 14245	1600	Add cross-check valves to tower T-160 overhead pumps to allow for more efficient and safe maintenance of suction lines during polymer removal.
4	MOC 11890	1600	Upgrade water injection source for tower T-63 from condensate water to process water. The project will require replacement of carbon steel piping with stainless steel, and additional piping will be needed to tie into process water pumps P-1345/1346. Base water injection to T-63 provides needed water concentration in the base of the tower for prevention of polymer formation. This project change will eliminate the use of clean water being added to the process, that will eventually be removed from the process and sent to burn as waste. Utilizing process water that already exists will help in CO2, natural gas, and water usage reduction

			efforts. This project will only involve the installation of piping.
5	MOC 14597	1600	Upgrade piping to allow the Acrylic II Unit to supply tower T-158 overheads to towers T-67/68 for ethyl acrylate recovery. This is mitigation in the event Acrylic I goes down.
6	GAA Piping Replacement	1600	Upgrade piping in Glacial Acrylic Acid unit due to it being corroded.

Permit by Rule Requirements - 30 TAC Chapter 106

General Requirements	
Registration Fee Reference No.:	**Application fee: 758549 / 582EA000660333**
Is this registration certified?	**Yes**
Is planned MSS included in the registration?	**No**
Are there affected NSR or Title V authorizations for the project?	**Yes**
NSR and/or Title V authorizations:	**NSR Permit No. 260; Title V Permit No. O1988, O1987**
If there are affected Title V authorizations, is monitoring being submitted as part of this registration?	**Yes**
Are there any upstream or downstream affects associated with this registration?	**No**
Are associated upstream/downstream emissions either included in the registration OR within current permitted limits with no changes to underlying air authorizations for the applicable units regarding BACT, health and environmental impacts, or other representations.	**N/A**
Are emissions for each PBR authorized facility less than the § 106.4(a)(1) limits?	**Yes**
Are total emissions from all sitewide PBR authorized facilities less than the § 106.4(a)(4) limits, OR has the site been subject to public notice requirements?	**Yes, been to public notice for NSR Permit No. 260.**
Are there permit limits on using PBRs at the site?	**No**
Is the facility subject to the NO_X Mass Cap and Trade Program?	**No NOx emissions with this project.**
Is the facility in compliance with all other applicable rules and regulations?	**Yes**
Does the registration include an appropriate PBR workbook, and has the workbook been verified?	**Yes**
Notes:	

Federal Applicability	
Does this project trigger a PSD or Nonattainment review?	**No**
Does the Major NSR applicability analysis include all associated upstream and/or downstream emissions?	**N/A**
Are there any applicable standards under NSPS, NESHAP, or NESHAP for source categories (MACT)?	**Yes**
If Yes, list applicable subparts:	**HON MACT H**
Notes:	

Permit by Rule Requirements - Compliance Demonstrations

PBR 106.261/262 Facilities (Emission Limitations / Emission and Distance Limitations)

- The emission point(s) associated with the facilities or changes to facilities are located **at least 100 ft** from the nearest off-site receptor.
- The total new or increase emissions will comply with the applicable hourly and annual emission limits as represented in the table below.
- **No §106.262(a)(4) chemicals present.**
- There are no changes to or addition of any pollution abatement equipment.
- Visible emissions to the atmosphere, from any point or fugitive source, do not exceed 5.0 percent opacity in any six-minute period.
- This registration does not authorize construction or changes to a facility authorized under another section of this chapter or

under standard permit.

Notes:

Compliance History and Site Review

In accordance with 30 TAC Chapter 60, a compliance history report was reviewed on:			**March 24, 2025**
Site rating / classification:	**11.17 / Satisfactory**	Company rating / classification:	**4.03 / Satisfactory**
Has any action occurred on the basis of the compliance history or rating?			**No**

106.261(a)(2) Emissions

Project Name	Chemical	Emission Threshold (lb/hr)	Emission Threshold (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Meets Threshold?
MOC 4522	Propylene	6.00	10.00	6.13E-04	2.69E-03	Yes
MOC 14211	Propylene	6.00	10.00	3.30E-04	1.45E-03	Yes

106.261(a)(3) Emissions

Project Name	Chemical	Emission Threshold (lb/hr)	Emission Threshold (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Meets Threshold?
MOC 4522	Acrylic Acid	1	4.38	9.16E-05	4.01E-04	Yes
MOC 14245	Acrylic Acid	1	4.38	2.85E-04	1.25E-03	Yes
MOC 14597	Acetic Acid	1	4.38	1.94E-04	8.51E-04	Yes
MOC 14597	Acrylic Acid	1	4.38	3.43E-04	1.50E-03	Yes
MOC 14597	Acetoxypropionic acid	1	4.38	2.70E-06	1.18E-05	Yes
GAA Piping Replacement	Methanol	1	4.38	3.45E-04	1.51E-03	Yes

106.262(a)(2) Emissions – Table 262

Project Name	Chemical	L Value (mg/m^3)	K value (from distance)	E, maximum Hourly Emission Threshold (lb/hr)	Annual Emission Threshold (tpy)	Actual Hourly Increases (lb/hr)	Actual Annual Increase (tpy)	Meets Threshold?
MOC 11890	Ethyl Acrylate	0.5	22	2.27E-02	9.95E-02	1.89E-03	8.28E-03	Yes
MOC 14597	Ethyl Acrylate	0.5	22	2.27E-02	9.95E-02	1.08E-07	4.73E-07	Yes

Total 106.261/262 Combined Emissions

	Total Hourly Emissions (lb/hr)	Total Annual Emissions (tpy)
Total Emissions:	**0.0041**	**0.0179**

Note: Discrepancy between emission summary table and speciation totals due to rounding.

Emission Summary

EPN / Emission Source	VOC		NOx		CO		PM_{10}		$PM_{2.5}$		SO_2		Other	
	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy
60HACAFUG / Acrylic Acid Fugitives	<0.01	0.02	-	-	-	-	-	-	-	-	-	-	-	-
TOTAL EMISSIONS (TPY):		**0.02**		**-**		**-**		**-**		**-**		**-**		**-**
MAXIMUM OPERATING SCHEDULE:	**Hours/Day**			**Days/Week**			**Weeks/Year**			**Hours/Year**		8,760		

Permit by Rule (PBR) Registration

Ms. Brittiny Williams
Permit Reviewer
Rule Registration Section

04/23/2025
Date

Michael Partee, Manager
Rule Registrations Section
Air Permits Division

04/24/2025
Date