STATEMENT OF BASIS

For the issuance of Draft Air Permit # 1177-AOP-R23 AFIN: 02-00028

1. PERMITTING AUTHORITY:

Division of Environmental Quality
5301 Northshore Drive
North Little Rock, Arkansas 72118-5317

2. APPLICANT:

Bakelite Chemicals LLC
124 Paper Mill Road
Crossett, Arkansas 71635

3. PERMIT WRITER:

Alexander Sudibjo

4. NAICS DESCRIPTION AND CODE:

NAICS Description: Other Basic Inorganic Chemical Manufacturing
NAICS Code: 325180

5. ALL SUBMITTALS:

The following is a list of ALL permit applications included in this permit revision.

Date of Application	Type of Application (New, Renewal, Modification, Deminimis/Minor Mod, or Administrative Amendment)	Short Description of Any Changes That Would Be Considered New or Modified Emissions
6/16/2025	Minor Mod	New boiler

6. REVIEWER'S NOTES:

With this minor modification, the facility is installing a new 31.5 MMBtu/hr natural gas-fired boiler (SN-154) and Melamine Hopper (IA). The facility's permitted annual emissions are increasing by 1.1 tpy PM/PM_{10}, 0.1 tpy SO_2, 0.8 tpy VOC, 11.4 tpy CO, 13.6 tpy NOx, 0.01 tpy lead, 0.02 tpy formaldehyde, and 0.25 tpy total other HAPs.

7. COMPLIANCE STATUS:

As of June 16, 2025, there are no compliance issues with the facility. ECHO (https://echo.epa.gov/detailed-facility-report?fid=110043787499) shows no air violation

identified as of December 7, 2023.

8. PSD/GHG APPLICABILITY:

a) Did the facility undergo PSD review in this permit (i.e., BACT, Modeling, etc.)? N
If yes, were GHG emission increases significant?

b) Is the facility categorized as a major source for PSD? N
- *Single pollutant ≥ 100 tpy and on the list of 28 or single pollutant ≥ 250 tpy and not on list*

If yes for 8(b), explain why this permit modification is not PSD.

9. SOURCE AND POLLUTANT SPECIFIC REGULATORY APPLICABILITY:

Source	Pollutant	Regulation (NSPS, NESHAP or PSD)
SN-11 and equipment in formaldehyde production	HAPs	40 C.F.R. Part 63, Subpart W
SN-11 and equipment in wet strength resin production	HAPs	40 C.F.R. Part 63, Subpart SS
SN-11 and equipment in Amino/Phenolic Resin Production	HAPs	40 C.F.R. Part 63, Subpart UU
SN-11 and equipment in Amino/Phenolic Resin Production	HAPs	40 C.F.R. Part 63, Subpart WW
SN-11 and equipment in Amino/Phenolic Resin Production	HAPs	40 C.F.R. Part 63, Subpart OOO
SN-11 and equipment in wet strength resin production	HAPs	40 C.F.R. Part 61, Subpart FF
SN-03, SN-11	See Section 12	40 C.F.R. Part 64 Compliance Assurance Monitoring
SN-140, SN-149, SN-150	HAPs	40 C.F.R. Part 63, Subpart ZZZZ
SN-149	Criteria Pollutants	40 C.F.R. Part 60, Subpart IIII
SN-153, SN-154	No specific limit	40 C.F.R. Part 60, Subpart Dc
SN-153, SN-154	HAPs	40 C.F.R. Part 63, Subpart DDDDD

10. UNCONSTRUCTED SOURCES:

Unconstructed Source	Permit Approval Date	Extension Requested Date	Extension Approval Date	If Greater than 18 Months without Approval, List Reason for Continued Inclusion in Permit
SN-154	R23 Issuance date	N/A	N/A	N/A

11. PERMIT SHIELD – TITLE V PERMITS ONLY:

Did the facility request a permit shield in this application? N
(Note - permit shields are not allowed to be added, but existing ones can remain, for minor modification applications or any Rule 18 requirement.)

If yes, are applicable requirements included and specifically identified in the permit? If not, explain why.

For any requested inapplicable regulation in the permit shield, explain the reason why it is not applicable in the table below.

Source	Inapplicable Regulation	Reason
N/A		

12. COMPLIANCE ASSURANCE MONITORING (CAM) – TITLE V PERMITS ONLY:

List sources potentially subject to CAM because they use a control device to achieve compliance and have pre-control emissions of at least 100 percent of the major source level. List the pollutant of concern and a brief summary of the CAM plan (temperature monitoring, CEMs, opacity monitoring, etc.) and frequency requirements of § 64.

Source	Pollutant Controlled	Cite Exemption or CAM Plan Monitoring and Frequency
N/A		

13. EMISSION CHANGES AND FEE CALCULATION:

See emission change and fee calculation spreadsheet in Appendix A.

14. AMBIENT AIR EVALUATIONS:

The following are results for ambient air evaluations or modeling.

a) NAAQS

A NAAQS evaluation is not required under the Arkansas State Implementation Plan, National Ambient Air Quality Standards, Infrastructure SIPs and NAAQS SIP per Ark. Code Ann. § 8-4-318, dated March 2017 and the DEQ Air Permit Screening Modeling Instructions.

b) Non-Criteria Pollutants:

The non-criteria pollutants listed below were evaluated. Based on Division of Environmental Quality procedures for review of non-criteria pollutants, emissions of all other non-criteria pollutants are below thresholds of concern.

1st Tier Screening (PAER)

Estimated hourly emissions from the following sources were compared to the Presumptively Acceptable Emission Rate (PAER) for each compound. The Division of Environmental Quality has deemed the PAER to be the product, in lb/hr, of 0.11 and the Threshold Limit Value (mg/m^3), as listed by the American Conference of Governmental Industrial Hygienists (ACGIH).

Pollutant	TLV (mg/m^3)	PAER (lb/hr) = 0.11 × TLV	Proposed lb/hr	Pass?
Formaldehyde	15.0	150.0	25	Yes
POM	0.20	0.022	0.00000232	Yes
Chromium	0.5	0.055	0.0000368	Yes

c) H_2S Modeling:

A.C.A. §8-3-103 requires hydrogen sulfide emissions to meet specific ambient standards. Many sources are exempt from this regulation, refer to the Arkansas Code for details.

Is the facility exempt from the H_2S Standards Y
If exempt, explain: the facility does not have H_2S emissions.

15. CALCULATIONS:

SN	Emission Factor Source (AP-42, testing, etc.)	Emission Factor (lb/ton, lb/hr, etc.)	Control Equipment	Control Equipment Efficiency	Comments
03	AP-42	Natural Gas Emission (lb/MMScf) $PM/PM_{10}/PM_{2.5}$ 7.6 SO_2 0.6 NO_x 100 CO 84 VOC 5.5 Pb 0.0005 Formaldehyde 0.075 Hexane 1.8 Naphthalene 0.00061 POM (Total) 0.000044 Toluene 0.0034 Cadmium 0.0011	N/A	N/A	N/A
	Testing	Production Related Emissions (lb/hr) Acetaldehyde 1.19 2.17 Formaldehyde 1.83 2.20 Methanol 12.3 21.74 Phenol 0.71 0.89 Dimethyl Ether 0.48 0.56 Total VOC 27.7 27.70 $PM/PM_{10}/PM_{2.5}$ 11.5 11.50 Ammonia 0.02 0.03	N/A	N/A	N/A
11	N/A	N/A	Thermal Oxidizer	99%	N/A
134	N/A	Emissions were calculated based on equation 7 found in USEPA Technical Guidance for Hazardous Analysis, Emergency Planning for EHS, December 1987 (Appendix G)	N/A	N/A	N/A
136 138 139	AP-42, Section 5.2	N/A	N/A	N/A	N/A
140	AP-42 Table 3.3-1, 3.3-2.	Lb/MMBtu PM: 0.31 SO_2: 0.29 NOx: 4.41	N/A	N/A	N/A

SN	Emission Factor Source (AP-42, testing, etc.)	Emission Factor (lb/ton, lb/hr, etc.)	Control Equipment	Control Equipment Efficiency	Comments
		CO: 0.95 VOC: 0.36 Acetaldehyde: 7.67×10^{-4} Benzene: 9.33×10^{-4} Formaldehyde: 1.18×10^{-3} Naphthalene: 8.48×10^{-5} Toluene: 4.09×10^{-4} Xylene: 2.85×10^{-4} Total POM: 1.68×10^{-4}			
145	AP-42 13.2.1.3	N/A	N/A	N/A	N/A
146	N/A	Emissions were estimated using emission factors and control efficiencies found in the document titles "Air Permit Technical Guidance for Chemical Sources – Equipment Leak Fugitives", prepared by the Texas Commission on Environmental Quality, draft, October 2000	N/A	N/A	N/A
148	Vendor	N/A	Dust collector	95%	Maximum air flow through the dust collector is 2,600 cfm Particulate emission from dust collector: 0.005 gr/cf
134		Emissions were calculated based on equation 7 found in USEPA Technical Guidance for Hazardous Analysis, Emergency Planning for EHS, December 1987 (Appendix G)	N/A	N/A	N/A
145	AP-42 13.2.1.3	N/A	N/A	N/A	N/A

SN	Emission Factor Source (AP-42, testing, etc.)	Emission Factor (lb/ton, lb/hr, etc.)	Control Equipment	Control Equipment Efficiency	Comments
146		Emissions were estimated using emission factors and control efficiencies found in the document titles "Air Permit Technical Guidance for Chemical Sources – Equipment Leak Fugitives", prepared by the Texas Commission on Environmental Quality, draft, October 2000	N/A	N/A	N/A
149 150	AP-42 Engines and NSPS limits	Varied	N/A	N/A	N/A
111 151	AP-42 Tanks	Equations	N/A	N/A	N/A
153 154	AP-42 1.4	1020 MMBtu/MMscf 0.0263 MMscf/hr & 230.0 MMscf/yr PM: 7.6 lb/MMscf PM_{10}: 7.6 lb/MMscf NOx: 50 lb/MMscf CO: 84 lb/MMscf SO_2: 0.6 lb/MMscf VOC: 5.5 lb/MMscf Lead: 0.0005 lb/MMscf	None	N/A	SN-153: 27.6 MMBtu/hr SN-154: 31.5 MMBtu/hr 1020 Btu/scf

16. TESTING REQUIREMENTS:

The permit requires testing of the following sources.

SN	Pollutants	Test Method	Test Interval	Justification
N/A				

17. MONITORING OR CEMS:

The permittee must monitor the following parameters with CEMS or other monitoring equipment (temperature, pressure differential, etc.)

SN	Parameter or Pollutant to be Monitored	Method (CEM, Pressure Gauge, etc.)	Frequency	Report (Y/N)
10, 11	Firebox Temperature	Temperature Monitoring Device	Continuous	Y
03, 05, 13, 18, 19	Pressure Drop	Visual Inspection	Weekly	N

18. RECORDKEEPING REQUIREMENTS:

The following are items (such as throughput, fuel usage, VOC content, etc.) that must be tracked and recorded.

SN	Recorded Item	Permit Limit	Frequency	Report (Y/N)
10	Firebox Temperature	1600 °F	Continuous	Y
11	Combustion Chamber Temperature	910°C	Continuous	Y
11	Transfer rack design analysis and throughput	None	Annual	Y
11 and Subpart OOO processes	Leak Detection Requirements	None	Varied	Y
Facility	Production Rates	See Plantwide Conditions #13 and #25	Monthly	Y
135	Ammonia Throughput	1,300,000 gallons	Monthly	Y
95	HAP	0.25 tpy single or combination	Monthly	Y
140 149 150	Hours of Operation	1,500 500/12 mo 500/12 mo	Monthly	Y
149 150	RICE Records	None	As needed	Y
111 151	Throughput	35,000,000 gallons tall oil	Monthly	Y

19. OPACITY:

SN	Opacity	Justification for limit	Compliance Mechanism
3	5%	Department Guidance	Weekly Observations

SN	Opacity	Justification for limit	Compliance Mechanism
10, 11	5%	Department Guidance	Natural Gas Combustion
140, 149, 150	20	Department Guidance	Emergency Engines
153, 154	5%	Department Guidance	Natural Gas Combustion

20. DELETED CONDITIONS:

Former SC	Justification for removal
N/A	

21. GROUP A INSIGNIFICANT ACTIVITIES:

The following is a list of Insignificant Activities including revisions by this permit.

Source Name	Group A Category	Emissions (tpy)							
		PM/ PM_{10}	SO_2	VOC	CO	NO_x	HAPs		Ammonia
							Single	Total	
1,000 gal Dowtherm Storage Tank	A-3			0.03					
Urea Storage Silo	A-13	1.63							
Kettle Urea Feed Hoppers	A-13	1.63							
Epichlorohydrin Storage Tank M-7	A-13			0.34			0.34	0.34	
Urea Solution Storage Tank	A-13								0.05
Urea Solution Storage Tank	A-13								0.18
Wet Strength Resin and Urea Solution Dilute Tank	A-13			0.01			0.14		0.03
Onsite Storage of Epichlorohydrin: 2-7,200 gallon trailers	A-13			5E-05			5E-05	5E-05	
RCI Distillate Tank	A-13			0.01					0.05
Crude Tall Oil Storage Tank	A-13			1.03					0.04

Source Name	Group A Category	Emissions (tpy)							
		PM/ PM_{10}	SO_2	VOC	CO	NO_x	HAPs		Ammonia
							Single	Total	
Solid Resins Drying Pad	A-13								
Epichlorohydrin Storage Tank M-27	A-13			0.34			0.34	0.34	
Process Water Storage Tanks (2) 112,000 gal each	A-13			0.14					
Melamine Hopper	A-13	0.15							
A-13 Total		3.41		1.87			0.82	0.82	0.35

22. VOIDED, SUPERSEDED, OR SUBSUMED PERMITS:

The following is a list of all active permits voided/superseded/subsumed by the issuance of this permit.

Permit #
1177-AOP-R22

APPENDIX A – EMISSION CHANGES AND FEE CALCULATION

Fee Calculation for Major Source

Revised 03-11-16

Facility Name: Bakelite Chemicals LLC
Permit Number: 1177-AOP-R23
AFIN: 02-00028

$/ton factor	28.14	Annual Chargeable Emissions (tpy)	232.59002
Permit Type	Minor Mod	Permit Fee $	500

Minor Modification Fee $	500
Minimum Modification Fee $	1000
Renewal with Minor Modification $	500
Check if Facility Holds an Active Minor Source or Minor Source General Permit	☐
If Hold Active Permit, Amt of Last Annual Air Permit Invoice $	0
Total Permit Fee Chargeable Emissions (tpy)	15.6
Initial Title V Permit Fee Chargeable Emissions (tpy)	

HAPs not included in VOC or PM: *Chlorine, Hydrazine, HCl, HF, Methyl Chloroform, Methylene Chloride, Phosphine, Tetrachloroethylene, Titanium Tetrachloride*

Air Contaminants: *All air contaminants are chargeable unless they are included in other totals (e.g., H2SO4 in condensible PM, H2S in TRS, etc.)*

Pollutant (tpy)	Check if Chargeable Emission	Old Permit	New Permit	Change in Emissions	Permit Fee Chargeable Emissions	Annual Chargeable Emissions
PM		77.8	78.9	1.1	1.1	78.9
PM_{10}		61.8	62.9	1.1		
$PM_{2.5}$		0	0	0		
SO_2		1.6	1.7	0.1	0.1	1.7
VOC		86.2	87	0.8	0.8	87
CO		57.6	69	11.4		
NO_X		30.7	44.3	13.6	13.6	44.3
Lead	☐	0.010048	0.020048	0.01		

Pollutant (tpy)	Check if Chargeable Emission	Old Permit	New Permit	Change in Emissions	Permit Fee Chargeable Emissions	Annual Chargeable Emissions
Ammonia	☑	9.83	9.83	0	0	9.83
Chlorine	☑	1.06	1.06	0	0	1.06
Formaldehyde	☐	24.18	24.2	0.02		
Hydrogen Chloride	☑	9.8	9.8	0	0	9.8
Mercury	☑	0.000024	0.000024	0	0	0.000024
Methanol	☐	53.51	53.51	0		
Phenol	☐	5.69	5.69	0		
Other HAPs	☐	9.77	10.02	0.25		