

STATEMENT OF BASIS

For the issuance of Draft Air Permit # 1672-AR-17 AFIN: 63-00164

1. PERMITTING AUTHORITY:

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

2. APPLICANT:

CoorsTek Benton
3315 Boone Road
Benton, Arkansas 72015

3. PERMIT WRITER:

Jimmy Do

4. NAICS DESCRIPTION AND CODE:

NAICS Description: Pottery, Ceramics, and Plumbing Fixture Manufacturing
NAICS Code: 327110

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
12/9/2025	Modification	Lower the throughput for SN-03 from 300 to 50 TPY and update the emission limits. Correct a calculation error for PM and PM ₁₀ at SN-21 and SN-22. Permitted emission rates for PM and PM ₁₀ decreased from 0.2 lbs/hr to 0.1 lbs/hr. Revise the CO, VOC, and Total HAP emission limits at SN-21 and SN-22. Lower destruction efficiencies were used to calculate emission limits for the thermal oxidizers (revised from 98% to 90%). Calculations for Total HAPs were also revised to include

		Hydrochloric Acid and Hydrofluoric acid, and the natural gas throughput was corrected. Relocate 4 Electric Deltech Ovens (Insignificant Activities) from Building B to Building A.
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6. REVIEWER'S NOTES:

Coorstek, Inc. owns and operates a high technology custom ceramic product manufacturing facility located at 3315 Boone Road, Benton, AR. This modification is to:

1. Lower the throughput for SN-03 from 300 to 50 TPY and update the emission limits.
2. Correct a calculation error for PM and PM₁₀ at SN-21 and SN-22. Permitted emission rates for PM and PM₁₀ decreased from 0.2 lbs/hr to 0.1 lbs/hr.
3. Revise the CO, VOC, and Total HAP emission limits at SN-21 and SN-22. Lower destruction efficiencies were used to calculate emission limits for the thermal oxidizers (revised from 98% to 90%). Calculations for Total HAPs were also revised to include Hydrochloric Acid and Hydrofluoric acid, and the natural gas throughput was corrected.
4. Relocate 4 Electric Deltech Ovens (Insignificant Activities) from Building B to Building A.

Permitted emission rates decreased for VOC by 12.1 tpy, CO by 0.3 tpy, and HAPs by 1.45 tpy. Permitted emission rates increased for PM by 0.4 tpy and NH₃ by 0.01 tpy.

7. COMPLIANCE STATUS:

The following summarizes the current compliance of the facility including active/pending enforcement actions and recent compliance activities and issues.

The Facility was last inspected on June 15, 2024. An inspection concern due to, the facility voluntarily reported a series of flame arrestor outages, on April 29, 2024, which resulted in periods of fugitive emissions occurring between the period of June 2020 – March 2024. Per documentation provided by the permittee the last recorded occurrence was on March 11, 2024. Based on the provided information, this does not meet the standard of compliance for General Condition 10(b)

EPA ECHO detected a violation between 7/24 – 9/24. The ADEQ had found that the facility failed to operate the thermal oxidizers (SN-08A and SN-08B) within their design limitations by performing cleaning of the flame arrestors while the vacuum furnaces were online. SN-08A was cleaned on 16 occurrences; SN-08B was cleaned on 17 occurrences.

The cleanings caused periodic fugitive emissions totaling approximately 230 hours. The Facility was fined for \$6,075 on October 27, 2025.

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? N

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*

9. SOURCE AND POLLUTANT SPECIFIC REGULATORY APPLICABILITY:

Source	Pollutant	Regulation (NSPS, NESHAP or PSD)
23	-	40 C.F.R 63 Subpart ZZZZ
23	HAPs, NO _x , CO, VOC	40 C.F.R 60 Subpart JJJJ

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
None				

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? N

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
None		

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
None		

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:

1st Tier Screening (PAER)

Estimated hourly emissions from the following sources were compared to the Presumptively Acceptable Emission Rate (PAER) for each compound. The Department has deemed the PAER to be the product, in lb/hr, of 0.11 and the Threshold Limit Value (mg/m³), 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?
Acetone	593.87	65.33	8.47	Yes
Ammonia	17.41	1.91	0.01	Yes
Hydrogen Fluoride	0.41	0.05	0.17	No
Acetaldehyde	45.05	4.95	0.09	Yes
Formaldehyde	1.5	0.165	0.70	No
Methanol	262.09	28.83	0.06	Yes
Toluene	75.37	8.29	0.12	Yes

Pollutant	TLV (mg/m ³)	PAER (lb/hr) = 0.11 × TLV	Proposed lb/hr	Pass?
Hexane	176.24	19.39	0.05	Yes
MIBK (Methyl Isobutyl Ketone)	81.93	9.01	0.41	Yes

2nd Tier Screening (PAIL)

AERMOD air dispersion modeling was performed on the estimated hourly emissions from the following sources, in order to predict ambient concentrations beyond the property boundary. The Presumptively Acceptable Impact Level (PAIL) for each compound has been deemed by the Division of Environmental Quality to be one one-hundredth of the Threshold Limit Value as listed by the ACGIH.

All modeling was performed using H1H, 1-year (2016) meteorological data.

Pollutant	PAIL (µg/m ³) = 1/100 of Threshold Limit Value	Modeled Concentration (µg/m ³)	Pass?
Hydrogen Fluoride	4.1	2.08383	Y
Formaldehyde	15.0	6.28484	Y

c) H₂S 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 H₂S Standards

Y

If exempt, explain: No H₂S 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, 21, and 22	AP-42, Testing	lb/ton lb/MMscf			
08	Testing	Varied	Afterburner	95	
09	Testing	Varied	Afterburner	95	
10	Testing, Manufacturers Specs	Varied	Condenser for Solvent Recovery Scrubber for Odor Control	Not Used	

SN	Emission Factor Source (AP-42, testing, etc.)	Emission Factor (lb/ton, lb/hr, etc.)	Control Equipment	Control Equipment Efficiency	Comments
23	AP-42, Manufacturers Specs	lb/MMBtu g/hp-hr			
24	Testing	lb/ton			

16. TESTING REQUIREMENTS:

The permit requires testing of the following sources.

SN	Pollutants	Test Method	Test Interval	Justification
None				

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)
08A, 08B, 09	Temperature	Temperature gauge	Daily	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)
03	Throughput	100,000 lbs of ceramic powder, SiC/B4C	Monthly	N
21, and 22	Throughput	5,200,000 lbs of ceramic powder, SiC/B4C	Monthly	N
08A and 08B	Throughput	1,200,000 lbs of ceramic powder	Monthly	N
23	Hours	100 Hours	Monthly	N
24	Throughput	2 tons of alumina parts	Monthly	N

19. OPACITY:

SN	Opacity	Justification for limit	Compliance Mechanism
03, 08A, 08B, 09, 21, 22, 23, and 24	5%	Reg.18.501	Natural gas combustion and inspector to verify on inspection

20. DELETED CONDITIONS:

Former SC	Justification for removal
	None

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	
							Single	Total
Alumina Lap and Polish (inorganic water-based slurry, wet process, no emissions)	A-13	0						
Alumina Shake and Dye (liquid water-based dye, Magnaflux SKL-4C, no emissions)	A-13	0						
Alumina Grinding (water-based wet process, no emissions)	A-13	0						
Silicon Lap and Polish (inorganic water-based slurry, wet process, no emissions)	A-13	0						

Source Name	Group A Category	Emissions (tpy)						
		PM/PM ₁₀	SO ₂	VOC	CO	NO _x	HAPs	
							Single	Total
Solvent Cleaner/Degreaser (All-Purpose Simple Green Cleaner (ready-to-use) water-based wet process, no emissions, <1.2% VOC, 4 drums/yr)	A-13	0						
Foam for packing part in nitrite area (two-part spray, Instapak "A" and Gflex "B", non-VOC, no emissions)	A-13	0						
Baghouses (used for intermittent housekeeping <i>only</i> , not control equipment) (formerly SN-11, 12, 13, 14, 15, and 16)	A-13	0.1						
Baghouse for intermittent dust housekeeping (ball mills)	A-13	0.08						
Baghouse (spray dryer mixing area #2) (used for intermittent housekeeping <i>only</i> , not control equipment)	A-13	1.15						
Alumina Wash Line (formerly SN-09)	A-13			0.43				
AMP Test Furnace	A-13	0.01	0.27	1.48	1.5	0.01	0.25	0.31
Clean Solvent Storage Tank	A-13			0.05			0.01	0.01

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Source Name	Group A Category	Emissions (tpy)						
		PM/PM ₁₀	SO ₂	VOC	CO	NO _x	HAPs	
							Single	Total
Waste Solvent Storage Tank	A-13			0.05			0.01	0.01
Test Kiln, electric, not in use	A-5	0						
JPW Electric Cure Oven (Building A)	A-13	0.02	0.01	0.01	0.01	0.01	0.01	0.02
Four (4) Electric Deltech Ovens	A-13	0.03	0.01		0.06		0.1	0.02

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 #
1672-AR-16

APPENDIX A – EMISSION CHANGES AND FEE CALCULATION

Fee Calculation for Minor Source

Revised 03-11-16

Facility Name: Coorstek Benton

Permit Number: 1672-AR-17

AFIN: 63-00164

			Old Permit	New Permit
\$/ton factor	28.14	Permit Predominant Air Contaminant	37.1	37.1
Minimum Fee \$	400	Net Predominant Air Contaminant Increase	0	
Minimum Initial Fee \$	500			
		Permit Fee \$	400	
Check if Administrative Amendment ☐		Annual Chargeable Emissions (tpy)	37.1	

Pollutant (tpy)	Old Permit	New Permit	Change
PM	6.2	6.6	0.4
PM ₁₀	1.6	1.6	0
PM _{2.5}	0	0	0
SO ₂	31.1	31.1	0
VOC	26	13.9	-12.1
CO	19	18.3	-0.7
NO _x	10.1	10.1	0
Total HAPs	7.39	5.94	-1.45
Acetone	37.1	37.1	0
NH3	0.02	0.03	0.01