

## STATEMENT OF BASIS

For the issuance of Air Permit # 1527-AOP-R10 AFIN: 63-00010

1. PERMITTING AUTHORITY:

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

2. APPLICANT:

Almatis, Inc.  
4701 Alcoa Road  
Bauxite, Arkansas 72011

3. PERMIT WRITER:

Parviz Mokhtari

4. PROCESS DESCRIPTION AND NAICS CODE:

NAICS Description: Alumina Refining  
NAICS Code: 331331

5. SUBMITTALS:

December 28, 2007

6. REVIEWER'S NOTES:

Almatis submitted an application for a minor modification to Permit #1527-AOP-R9. Almatis is requesting authorization to:

- install and operate eighteen (18) Mini-Size Dust Collectors and fans (SN-415BH0001 thru SN-415BH0018),
- revise the nuisance dust collection ducting from the No. 11 dust collector to the No. 5 bucket elevator and the associated feed input belt conveyor and screener, and
- Remove No.4 baghouse dust collector (SN-415BH6191) and reduce the capacity of the No. 11 dust collector (SN-415BH6192) from 12,300 to 7,500 ACFM.

The new eighteen (18) Mini-Size Dust Collectors result in an increase of PM/PM10 emissions by 2.6 tpy. However, removal of SN-425BH6191 and reducing the capacity of SN-415BH6192 results in a decrease of PM/PM10 emissions by 6.5 tpy. The permitted emission rates will decrease due to this modification are 4.6 tpy PM and 2.8 PM<sub>10</sub>.

7. COMPLIANCE STATUS:

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

There are no known enforcement actions against the facility.

8. APPLICABLE REGULATIONS:

PSD Applicability

Did the facility undergo PSD review in this permit (i.e., BACT, Modeling, etc.)? N  
 Has the facility undergone PSD review in the past? N  
 Is the facility categorized as a major source for PSD? Y  
     ≥ 100 tpy and on the list of 28? Y  
     ≥ 250 tpy all other? Y

PSD Netting

Was netting performed to avoid PSD review in this permit? N

Source and Pollutant Specific Regulatory Applicability

Source	Pollutant	Regulation (NSPS, NESHAP or PSD)
046BL01 046BL02 046BL03 046BL04 046BL05	fuel record keeping only	NSPS Part Dc
451BH011 451BH015	PM, Opacity	NSPS Subpart UUU
426BH3314 405BH0134 435BH0760 420BH07	PM, Opacity	NSPS Subpart LL

9. EMISSION CHANGES:

The following table summarizes plantwide emission changes associated with this permitting action.

Plantwide Permitted Emissions (tpy)			
Pollutant	Permit # 1527-AOP-R9	Permit # 1527-AOP-R10	Change
PM	901.8	897.2	-4.6
PM <sub>10</sub>	896.0	893.2	-2.8
SO <sub>2</sub>	40.2	40.2	0
VOC	70.4	70.4	0
CO	344.9	344.9	0
NO <sub>x</sub>	680.0	680.0	0
Formaldehyde	0.07	0.07	0
HF	109.5	109.5	0
Diethanolamine	1.5	1.5	0
HCl	0	0	0

10. MODELING:

Criteria Pollutants

Pollutant	Emission Rate (lb/hr)	NAAQS Standard (µg/m <sup>3</sup> )	Averaging Time	Highest Concentration (µg/m <sup>3</sup> )	% of NAAQS
PM <sub>10</sub>	230.5	50	Annual	2.75	5.5
		150	24-Hour	22.33	14.9
SO <sub>2</sub>	9.6	80	Annual	4	0.5
		1300	3-Hour	17.2	1.3
		365	24-Hour	6.5	1.7
CO	79.1	10,000	8-Hour	112	1.12
		40,000	1-Hour	218	0.5

Pollutant	Emission Rate (lb/hr)	NAAQS Standard ( $\mu\text{g}/\text{m}^3$ )	Averaging Time	Highest Concentration ( $\mu\text{g}/\text{m}^3$ )	% of NAAQS
NO <sub>x</sub>	150.5	100	Annual	7.5	7.5

Non-Criteria Pollutants:

1<sup>st</sup> 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 ( $\text{mg}/\text{m}^3$ ), as listed by the American Conference of Governmental Industrial Hygienists (ACGIH).

Pollutant	TLV ( $\text{mg}/\text{m}^3$ )	PAER (lb/hr) = $0.11 \times \text{TLV}$	Proposed (lb/hr)	Pass?
Formaldehyde	1.5	0.17	0.03	Y
Hydrogen Fluoride	2.45	0.27	58.1	N
Diethanolamine	2	0.22	0.4	N

2<sup>nd</sup> Tier Screening (PAIL)

ISCST3 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 Department to be one one-hundredth of the Threshold Limit Value as listed by the ACGIH.

Pollutant	PAIL ( $\mu\text{g}/\text{m}^3$ ) = $1/100$ of Threshold Limit Value	Modeled Concentration ( $\mu\text{g}/\text{m}^3$ )	Pass?
Hydrogen Fluoride	24.5	14.7	Y
Diethanolamine	20	0.1	Y

11. CALCULATIONS:

SN	Emission Factor Source (AP-42, testing, etc.)	Emission Factor (lb/ton, lb/hr, etc.)	Control Equipment	Control Equipment Efficiency	Comments
All Natural Gas Fired Sources	AP-42	Varied	Varied	Varied	-----
All Baghouses and Scrubbers	Grain Loading	Varied	Baghouse or Scrubber	Varied	-----
HF emissions from 405BH0133 and EP0233	Testing	915 lb HF per ton Aluminum Fluoride	N/A		
143FHE01	Combustion: (AP-42)	5.8 lb/10 <sup>3</sup>	N/A	N/A	
Formaldehyde emissions from 143FHE01	Testing	100 lb per year of Formaldehyde/8.33 MM lb Silane coated product	N/A	N/A	

12. TESTING REQUIREMENTS:

The permit requires testing of the following sources.

SN	Pollutants	Test Method	Test Interval	Justification
046BL01 thru 05	CO NO <sub>x</sub>	7E 10	Every 5 years	Department Guidance
405BH0133 405EP0233 060EP0241 425EP04 426EP06 426EP07	PM CO NO <sub>x</sub>	5 and 202 7E 10	Annual or Bi-annual	Department Guidance
405BH0133 405EP0233	HF	26	Annual or Bi-annual	Department Guidance
060BH0573	PM	5 and 202	Annual or Bi-annual	Department Guidance
426BH3314 405BH0134 451BH0760 400BH09 420BH07	PM	5 or 17	Within 180 days of startup	NPS Subpart LL

SN	Pollutants	Test Method	Test Interval	Justification
415BH0001 through 415BH0018*	PM	5 or 17	Within 180 days of startup	NSPS Subpart LL
*	Stack testing be performed on one source in each of the following groups;  Test 1: 415 BH02, 415 BH 03, 415 BH04 and 415 BH05 Test 2: 415 BH01, 415 BH06, 415 BH07, 415 BH09, 415 BH11, 415 BH12, 415 BH13 and 415 BH14 Test 3: 415 BH08 and 415 BH10 Test 4: 415 BH15 Test 5: 415 BH16. 415 BH17 and 415 BH18			

13. MONITORING OR CEMS

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

There are no monitoring or CEMs required by this permit.

14. RECORD KEEPING 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)
046BL01-05	40 CFR Part 60, Subpart Dc	None	Monthly	N
415BH015 415BH011	Records of initial tests	None	Once	Y
Hydrate Section	Silane coated alumina trihydrate production	8.2 million pounds	Monthly	Y
405BH0133 405EP0233	Aluminum fluoride feed rate	127 lb/hr and 109.5 tpy HF emissions	Daily and monthly	Y
425AUC01	Alumina load-out	20,000 tons/12 mo	Monthly	Y
SN-415BH0001 through 415BH0018	Records of initial performance tests	None	Once	Y

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15. OPACITY:

SN	Opacity	Justification for limit	Compliance Mechanism
Appendix A of the permit is a summary of all the opacity requirements in the permit.			

16. DELETED CONDITIONS:

Former SC	Justification for removal
N/A	N/A

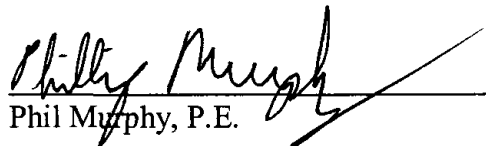
17. VOIDED, SUPERCEDED, OR SUBSUMED PERMITS:

List all active permits voided/superceded/subsumed by the issuance of this permit.

Permit #
1527-AOP-R9

18. CONCURRENCE BY:

The following supervisor concurs with the permitting decision.

  
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Phil Murphy, P.E.

