

## STATEMENT OF BASIS

For the issuance of Draft Air Permit # 1527-AOP-R5 AFIN: 63-00010

1. PERMITTING AUTHORITY:

Arkansas Department of Environmental Quality  
8001 National Drive  
Little Rock, Arkansas 72219-8913

2. APPLICANT:

Almatis, Inc.  
4701 Alcoa Road  
Bauxite, Arkansas 72011

3. PERMIT WRITER:

Shawn Hutchings

4. PROCESS DESCRIPTION AND NAICS CODE:

NAICS Description: Alumina Refining  
NAICS Code: 331331

5. SUBMITTALS:

October 23, 2003

6. REVIEWER'S NOTES:

This permit is the first Title V renewal for the facility. With the renewal several additional permit applications and minor modification applications were included into this permit. The changes in this permit are as follows. The sources 451BH02, 451TD01, 451TD02, 451TD03, and 451TD04 were removed from the permit as they are no longer in service. Hydrochloric acid emissions were removed from sources 405BH0133 and 405EP0233. The facility no longer uses hydrochloric acid in these sources. Sources 055BM01 and 060BH04 were added to the permit. In previous permits, sources 426EP06 and 426EP07 were permitted for continuous operation. However these sources annual emission rates for CO and NO<sub>x</sub> did not correspond to continuous use rates. These rates were corrected adding approximately 120 tons of CO and 100 tons of NO<sub>x</sub> to the permit.

This permit also incorporates a name change from Alcoa Industrial Chemicals to Almatis

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

9. EMISSION CHANGES:

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

Plantwide Permitted Emissions (tpy)			
Pollutant	Permit # 1527-AOP-R4	Permit #1527-AOP-R5	Change
PM	1115.4	892.5	-222.9
PM <sub>10</sub>	1112.0	885.6	-226.4
SO <sub>2</sub>	56.0	40.2	-15.8

Plantwide Permitted Emissions (tpy)			
VOC	52.0	60.9	8.9
CO	154.6	344.9	190.3
NO <sub>x</sub>	647.4	685.2	37.8
Formaldehyde	0	0.03	0.03
HF	109.5	109.5	0
Diethanolamine	0	1.5	1.5
HCl	199.8	0	-199.8

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>	227.2	50	Annual	1.2	2.4
		150	24-Hour	16	10.6
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
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 (mg/m<sup>3</sup>), as listed by the American Conference of Governmental Industrial Hygienists (ACGIH).

Pollutant	TLV (mg/m <sup>3</sup> )	PAER (lb/hr) = 0.11 × TLV	Proposed lb/hr	Pass?
Formaldehyde	1.5	.17	.001	Y
Hydrogen Fluoride	2.45	0.27	58.1	N
Diethanolamine	2	.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 (µg/m <sup>3</sup> ) = 1/100 of Threshold Limit Value	Modeled Concentration (µg/m <sup>3</sup> )	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		

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

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	Dc fuel usage	None	Monthly	N
415BH015 415BH011	Records of initial tests	None	Kept on site	N
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

15. OPACITY:

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

16. DELETED CONDITIONS:

Former SC	Justification for removal
7	Initial NSPS test requirements no longer needed.
18 and 21	Dealt with HCl usage no longer needed.
20	Once HCl portions were removed the condition was redundant with the daily records already required in other conditions.

17. VOIDED, SUPERCEDED, OR SUBSUMED PERMITS:

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

Permit #
1527-AOP-R4

18. CONCURRENCE BY:

The following supervisor concurs with the permitting decision.

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Thomas Rheume, P.E.