

STATEMENT OF BASIS

For the issuance of Draft Air Permit # 1035-AOP-R3 AFIN: 04-00247

1. PERMITTING AUTHORITY:

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

2. APPLICANT:

Mid-America Cabinets, Incorporated
20980 Marion Lee Road
Gentry, Arkansas 72734

3. PERMIT WRITER:

Joseph Hurt

4. PROCESS DESCRIPTION AND NAICS CODE:

NAICS Description: Wood Kitchen Cabinet and Countertop Manufacturing
NAICS Code: 337110

5. SUBMITTALS:

4/5/2010

6. REVIEWER'S NOTES:

This permit modification is the second renewal of the initial Title V permit for this facility. The facility is moving the Laminating Operations from the Insignificant Activities list and permitting the operations as a source (SN-08). The facility is also including the emissions from the Countertop Cleaning Operations (SN-09). The total permitted increases include 0.2 tpy of VOC, 14.14 tpy of Single HAP, and 0.14 tpy of Total HAPs.

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 current or pending enforcement actions.

8. PSD APPLICABILITY:

a. Did the facility undergo PSD review in this permit (i.e., BACT, Modeling, etc.)? 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?

If yes, explain why this permit modification not PSD?

9. SOURCE AND POLLUTANT SPECIFIC REGULATORY APPLICABILITY:

Source	Pollutant	Regulation (NSPS, NESHAP or PSD)
Facility	HAP	40 CFR 63, Subpart JJ

10. EMISSION CHANGES AND FEE CALCULATION:

See emission change and fee calculation spreadsheet in Appendix A.

11. MODELING:

Criteria Pollutants

Examination of the source type, location, plot plan, land use, emission parameters, and other available information indicate that modeling is not warranted at this time.

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
PM ₁₀	4.0	150	24-Hour	7.42769	4.95 %
SO ₂	--	80	Annual	--	--
		1300	3-Hour	--	--
		365	24-Hour	--	--
VOC	206.8	0.12	1-Hour (ppm)	--	--
CO	--	10,000	8-Hour	--	--
		40,000	1-Hour	--	--
NO _x	--	100	Annual	--	--
Pb	--	0.15	Rolling 3-month Period over 3 years (not to be	--	--

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
			exceeded in any 3 month period)		

Non-Criteria Pollutants:

This permit contains a TLV table for non-criteria pollutants. Modeling was used to determine the permitted emission rates for ranges of non-criteria pollutants (grouped by TLV) that pass the PAER or PAIL. Therefore, modeling of specific non-criteria pollutants was not performed.

Minimum Allowable TLV of Each HAP (milligrams per cubic meter)	Maximum Allowable Individual HAP Content As Applied (lb/gal)
400.37	7.5
360.33	6.75
320.29	6
280.25	5.25
240.22	4.5
200.18	3.75
160.14	3
120.11	2.25
80.07	1.5
40.03	0.75
4.00	0.075

- Note: Intermediate values can be obtained by interpolation of the above table or using the following formula.

$$\text{- Minimum HAP TLV} \left(\frac{\text{mg}}{\text{m}^3} \right) = \frac{\left(X \frac{\text{lb}}{\text{gal}} \right) \times \left(400.37 \frac{\text{mg}}{\text{m}^3} \right)}{7.50 \frac{\text{lb}}{\text{gal}}}$$

- Where: X lb/gal = the intermediate HAP content lb/gal as applied.
- Any formaldehyde containing materials may use a TLV value of 1.5 mg/m³.
- This table excludes Toluene CAS # 108-88-3 and any metal HAPs.

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	1187	130.5	113.00	Yes
Toluene	75.36	8.28	206.73*	NO

* There were several materials used by the facility containing Toluene which violate the TLV table. Therefore, the emissions were assumed to be 100% Toluene for PAER and PAIL analysis.

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

Pollutant	PAIL (µg/m ³) = 1/100 of Threshold Limit Value	Modeled Concentration (µg/m ³)	Pass?
Toluene	753.6	400.37	Yes

Other Modeling:

Odor:

Odor modeling for sources emitting styrene.

Pollutant	Threshold value 1-hour average	Modeled Concentration (µg/m ³)	Pass?
Styrene	1361 µg/m ³	N/A	N/A

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
 If exempt, explain: _____

N

Pollutant	Threshold value	Modeled Concentration (ppb)	Pass?
H ₂ S	20 parts per million (5-minute average*)	N/A	N/A
	80 parts per billion (8-hour average) residential area	N/A	N/A
	100 parts per billion (8-hour average) nonresidential area	N/A	N/A

*To determine the 5-minute average use the following equation

$$C_p = C_m (t_m/t_p)^{0.2} \text{ where}$$

C_p = 5-minute average concentration

C_m = 1-hour average concentration

t_m = 60 minutes

t_p = 5 minutes

12. CALCULATIONS:

SN	Emission Factor Source (AP-42, testing, etc.)	Emission Factor (lb/ton, lb/hr, etc.)	Control Equipment	Control Equipment Efficiency	Comments
01	Material Balance	7.5 lb/gal VOC 4.0 lb/gal Acetone	None	N/A	Spray rate of 7.5 gallons/hr; tpy is actual usage & Maximum HAP content of 7.5 lb/gal
02	Material Balance	7.5 lb/gal VOC 4.0 lb/gal Acetone	None	N/A	Spray rate of 8.75 gallons/hr; tpy is actual usage & Maximum HAP content of 7.5 lb/gal
03	Material Balance	7.5 lb/gal VOC 4.0 lb/gal Acetone	None	N/A	Spray rate of 2.5 gallons/hr; tpy is actual usage & Maximum HAP content of 7.5 lb/gal
04	Material	7.5 lb/gal	None	N/A	Spray rate of 7.5 gallons/hr; tpy is

SN	Emission Factor Source (AP-42, testing, etc.)	Emission Factor (lb/ton, lb/hr, etc.)	Control Equipment	Control Equipment Efficiency	Comments
	Balance	VOC 4.0 lb/gal Acetone			actual usage & Maximum HAP content of 7.5 lb/gal
05	AP-42	0.03gr/scf	Cyclone	70%	
06	Material Balance	7.5 lb/gal VOC 4.0 lb/gal Acetone	None	N/A	Spray rate of 0.5 gallons/hr; tpy is actual usage & Maximum HAP content of 7.5 lb/gal
07	Material Balance	7.5 lb/gal VOC 4.0 lb/gal Acetone	None	N/A	Spray rate of 0.5 gallons/hr; tpy is actual usage & Maximum HAP content of 7.5 lb/gal
08	Material Balance	7.5 lb/gal VOC	None	N/A	Maximum HAP content of 7.5 lb/gal
09	Material Balance	7.5 lb/gal VOC	None	N/A	

13. TESTING REQUIREMENTS:

The permit requires testing of the following sources.

SN	Pollutants	Test Method	Test Interval	Justification
N/A				

14. 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)
N/A				

15. 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)
01 - 04 & 06 - 09	TLV values	Varies (See TLV Table)	Continuously	Y
	VOC/HAP content	7.5 lb per gallon	Continuously	Y
Facility	Annual VOC emissions	167.1 tons per year	Monthly	Y
	Single HAP	47.64 tons per year	Monthly	Y
	Total HAPs	55.24 tons per year	Monthly	Y
	Acetone Content	4.0 lb per gallon	Continuously	Y
	Acetone Usage	89.10 tons per year	Monthly	Y
	Toluene emissions	47.64 tons per year	Monthly	Y
	Hours of Operation	Five days a week from 6 AM - 10 PM and Sundays from 6 AM - 12 Noon	Daily	N
01 - 04, 06, & 07	Subpart JJ Compliance	1.0 lbs solid deposit/lb VHAP emitted of compliant materials usage	Twice yearly	Y
	Subpart JJ Compliance	Various reports including work plans, operator training documentation, and usage of HAP	As required	N
08	Laminate area	4,800 ft ² per hour	Hourly	Y
09	Toluene Usage	3 gallons per month	Monthly	Y

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16. OPACITY:

SN	Opacity	Justification for limit	Compliance Mechanism
05	20%	Department Guidance	Weekly observations

17. DELETED CONDITIONS:

Former SC	Justification for removal
Various	Various Specific Conditions were updated to reflect the updated TLV table based on recent modeling results.

18. GROUP A INSIGNIFICANT ACTIVITIES

Source Name	Group A Category	Emissions (tpy)						
		PM/PM ₁₀	SO ₂	VOC	CO	NO _x	HAPs	
							Single	Total
N/A								

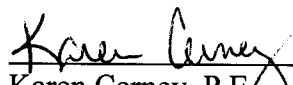
19. VOIDED, SUPERSEDED, OR SUBSUMED PERMITS:

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

Permit #
1035-AOP-R2

20. CONCURRENCE BY:

The following supervisor concurs with the permitting decision.



Karen Cerney, P.E.

APPENDIX A – EMISSION CHANGES AND FEE CALCULATION

Fee Calculation for Major Source

Revised 03-01-10

Facility Name: Mid-America Cabinets, Incorporated
 Permit Number: 1035-AOP-R3
 AFIN: 04-00247

\$/ton factor	22.07	Annual Chargeable Emissions (tpy)	273.8
Permit Type	Modification	Permit Fee \$	1000

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	<input type="checkbox"/>
If Hold Active Permit, Amt of Last Annual Air Permit Invoice \$	0
Total Permit Fee Chargeable Emissions (tpy)	0.2
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	<input checked="" type="checkbox"/>	17.6	17.6	0	0	17.6
PM ₁₀	<input type="checkbox"/>	17.6	17.6	0		
SO ₂	<input type="checkbox"/>	0	0	0		
VOC	<input checked="" type="checkbox"/>	166.9	167.1	0.2	0.2	167.1
CO	<input type="checkbox"/>	0	0	0		
NO _x	<input type="checkbox"/>	0	0	0		
Single HAP	<input type="checkbox"/>	33.5	47.64	14.14		
Total HAP	<input type="checkbox"/>	55.1	55.24	0.14		
Acetone	<input checked="" type="checkbox"/>	89.1	89.1	0	0	89.1