

STATEMENT OF BASIS

For the issuance of Draft Air Permit # 0378-AR-13 AFIN: 04-00111

1. PERMITTING AUTHORITY:

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

2. APPLICANT:

Gates Corporation
1801 North Lincoln
Siloam Springs, Arkansas 72761

3. PERMIT WRITER:

Melisha Griffin

4. PROCESS DESCRIPTION AND NAICS CODE:

NAICS Description: Rubber Product Manufacturing for Mechanical Use
NAICS Code: 326291

5. SUBMITTALS:

10/24/2008

6. REVIEWER'S NOTES:

In this modification, the facility is proposing the following changes:

- Produce a new type of belt. The operations involved in the production of the new belt will be virtually the same as those involved in the production of the belts currently manufactured. In general, the amount of rubber processed will be decreasing, as well as the overall emissions.
- Install a new flat belt grinder (SN-14). The new grinder will vent inside the building and emissions are accounted for under the SN-11, SN-12 and SN-13 bubble.

These changes have resulted in the addition of HAPs not previous permitted (0.76 tpy of carbonyl sulfide, 0.05 tpy of Cumene, 0.03 tpy of isooctane, and 2-chloro-1,3-butadiene).

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 enforcement actions against the facility.

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)
N/A		

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.

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/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?
Acetophenone	49.14	5.406	12.2926	Fail
Acrolein	0.23	0.025	0.06838	Fail
Aniline	7.62	0.838	0.12423	Pass
Benzene	1.60	0.176	0.32232	Fail
1,3-Butadiene	4.42	0.487	0.3526	Pass
Carbon Disulfide	3.11	0.34255	28.38	Fail
Cumene	245.79	27.03661	0.229317	Pass
DEHP (Bis(2-ethylhexyl) phthalate)	5.00	0.55000	0.56614	Fail
Isooctane (2,2,4-Trimethylpentane)	1400.27	154.030	0.121	Pass
Methylene Chloride (dichloromethane)	173.68	19.105	0.83679	Pass
Methyl Isobutyl Ketone	204.83	22.531	1.05	Pass
n-Hexane	176.24	19.386	0.7105	Pass
Phenol	19.25	2.117	0.11808	Pass
Propylene oxide	1.42	0.156	0.87	Fail

Pollutant	TLV (mg/m ³)	PAER (lb/hr) = 0.11*TLV	Proposed lb/hr	Pass?
Styrene	85.20	9.372	0.0289	Pass
Tetrachloroethylene	169.53	18.648	1.4578	Pass
Toluene	188.40	20.725	0.4736	Pass
2-Chloro-1,3-Butadiene (chloroprene)	36.21	3.983	0.832	Pass
Nickel	1.50	0.165	0.0932	Pass
Xylene	434.19	47.761	1.0832	Pass
Cadmium	0.002	0.00022	0.00143	Fail
Lead	0.05	0.006	0.0162	Fail

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?
Acetophenone	491	81.67	Yes
Acrolein	2.292843	0.41	Yes
Benzene	15.97342	2.17	Yes
DEHP (Bis(2-ethylhexyl) phthalate)	50.0	3.36	Yes
Carbon Disulfide*	175	169.10	Yes

Pollutant	(PAIL, $\mu\text{g}/\text{m}^3$) = 1/100 of Threshold Limit Value	Modeled Concentration ($\mu\text{g}/\text{m}^3$)	Pass?
Propylene oxide	14.2	4.77	Yes
Cadmium	0.02	0.013	Yes
Lead	0.5	0.149	Yes

*The PAIL for Carbon Disulfide is based on an 1/4th of the RFC Value (which is 700 $\mu\text{g}/\text{m}^3$). 1/4th of the RFC = 175 $\mu\text{g}/\text{m}^3$. The Pail (in this instance is compared to the annual concentration – which is equal to 169.10 $\mu\text{g}/\text{m}^3$).

Other Modeling:

Odor:

Odor modeling for sources emitting styrene.

Pollutant	Threshold value 1-hour average	Modeled Concentration ($\mu\text{g}/\text{m}^3$)	Pass?
Styrene	1361 $\mu\text{g}/\text{m}^3$	1.256	Yes

H₂S Modeling: N/A

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/N
 If exempt, explain: _____

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

*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 02	AP-42	NOx – 100 CO – 84 PM10 – 7.6 SO2 – 0.6 VOC – 5.5	None	NA	Natural gas fuel – units are lbs/MMscf
01 02	AP-42	NOx – 20 CO – 5 PM10 – 3.3 SO2 – 71 VOC – 0.252	None	NA	#2 Fuel Oil – units are lbs/Mgal
08	Material balance	-	-	-	-
09	AP-42 Table 4.12-9	VOC – 8.68E-05 HAPS – see application	None	NA	Units are lbs/lb rubber processed
10	AP-42 Table 4.12-10	VOC – 2.94E-03 HAPS – see application	None	NA	Units are lbs/lb rubber processed
11 12 13 14	AP-42 Table 4.12-12	VOC – 1.78E-03 PM10 – 1 HAPS – see application	Cyclones + ESP	99%	Units are lbs/lb rubber processed

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, 02	Fuel Oil Usage	869,760 gallons per 12 months	Monthly	N
01, 02	Fuel Oil sulfur content	0.5 % sulfur	Each Shipment	N
08	VOC Usage	25.3 tons per 12 months	Monthly	N
08	HAPS usage	Toluene – 14.33 tons per 12 months Hexane – 14.33 tons per 12 months	Monthly	N
Facility	Rubber Throughput	37,300,000 tons per 12 months	Monthly	N

16. OPACITY:

SN	Opacity	Justification for limit	Compliance Mechanism
01, 02	5%	Department Standard	Fuel used

SN	Opacity	Justification for limit	Compliance Mechanism
(natural gas)			
01, 02 (fuel oil)	20%	Department Standard	Observation
11, 12, 13 and 14	10%	Department Standard	Observation

17. DELETED CONDITIONS:

Former SC	Justification for removal
N/A	

18. GROUP A INSIGNIFICANT ACTIVITIES

Source Name	Group A Category	Emissions (tpy)							
		PM/PM ₁₀	SO ₂	VOC	CO	NO _x	HAPs		
							Single	Total	
Mobile Printers	Group A, No. 13								
Grinding Wheel Cleaning	Group A, No. 13								
Cooling Towers	Group A, No. 13								
Emergency Generator	Group A, No. 13	0.01	0.01	0.16	0.01	0.11	-----	----	
Fire Pump Diesel Engine	Group A, No. 13	0.01	0.01	0.01	0.02	0.07	---	---	
Oil Demister	Group A, No. 5								

19. VOIDED, SUPERSEDED, OR SUBSUMED PERMITS:

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

Permit #
0378-AR-12

Permit #: 0378-AR-13

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20. CONCURRENCE BY:

The following supervisor concurs with the permitting decision.


Phillip Murphy, P.E.

APPENDIX A – EMISSION CHANGES AND FEE CALCULATION

