

Uncontrolled Potential Emissions

Source No.	Emission Unit	Emission Source	Information Provided by Facility				PM		PM ₁₀		SO ₂		CO		VOC		NO _x		HAPs	
			Design Input (lbs./hr.)	Design Input (tons/hr.)	Flow Rate (cfm)	Design Heat Input (MMBtu/hr.)	lbs./hr.	tons/yr.	lbs./hr.	tons/yr.	lbs./hr.	tons/yr.	lbs./hr.	tons/yr.	lbs./hr.	tons/yr.	lbs./hr.	tons/yr.	lbs./hr.	tons/yr.
01	Forming	Forming Door Hardware	457	0.23	--	--	--	--	--	--	--	--	--	--	0.21	--	--	--	--	--
02	EPS Sandwich Doors	EPS Foam Gluing	--	--	--	--	--	--	--	--	--	--	--	--	3.23	--	--	--	--	3.23
		EPS Foam Imprinting	--	--	--	--	--	--	--	--	--	--	--	--	1.68	--	--	--	--	0.03
		Window Cutting	--	0.00	10600	--	6.85	30.00	--	--	--	--	--	--	--	--	--	--	--	--
03	Injection Doors	Polyurethane Foam Injection	3,741	1.87	21189	--	--	--	--	--	--	--	--	--	5.79	25.36	--	--	--	0.00
		Heat Tunnel (NG Burning)	--	--	--	0.61	0.00	0.02	--	--	0.00	0.00	0.05	0.22	0.00	0.01	0.06	0.26	--	--
		Sawing	3,741	1.87	3397	--	5.99	26.22	--	--	--	--	--	--	0.12	0.54	--	--	--	--
04	Paint	Paint Spraying	15	0.01	12600	--	2.54	11.13	--	--	--	--	--	--	3.62	15.86	--	--	--	--
		NG Burning - Curing & Air Replacement	15	0.01	12600	5.50	0.04	0.18	--	--	0.00	0.01	0.45	1.98	0.03	0.13	0.54	2.36	--	--
05	Tank	Blowing Agent Tank	--	--	--	--	--	--	--	--	--	--	--	--	1.65	7.24	--	--	--	--
TOTAL EMISSIONS:							15.42	67.55	0.00	0.00	0.00	0.02	0.50	2.21	11.22	54.26	0.60	2.63	--	3.26

Controlled Emissions

Source No.	Emission Unit	Emission Source	Information Provided by Facility				PM		PM ₁₀		SO ₂		CO		VOC		NO _x	
			Design Input (lbs./hr.)	Design Input (tons/hr.)	Flow Rate (cfm)	Design Heat Input (MMBtu/hr.)	lbs./hr.	tons/yr.	lbs./hr.	tons/yr.	lbs./hr.	tons/yr.	lbs./hr.	tons/yr.	lbs./hr.	tons/yr.	lbs./hr.	tons/yr.
01	Forming	Forming Door Hardware	457	0.23	--	--	--	--	--	--	--	--	--	--	0.21	--	--	--
02	EPS Sandwich Doors	EPS Foam Gluing	--	--	--	--	--	--	--	--	--	--	--	--	3.23	--	--	--
		EPS Foam Imprinting	--	--	--	--	--	--	--	--	--	--	--	--	1.68	--	--	--
		Window Cutting	--	0.00	10600	0.00	0.01	0.03	--	--	--	--	--	--	--	--	--	--
03	Injection Doors	Polyurethane Foam Injection	3,741	1.87	21189	--	--	--	--	--	--	--	--	--	5.79	25.36	--	--
		Heat Tunnel (NG Burning)	--	--	--	0.61	0.00	0.02	--	--	0.00	0.00	0.05	0.22	0.00	0.01	0.06	0.26
		Sawing	3,741	1.87	3397	--	0.00	0.01	--	--	--	--	--	--	0.12	0.54	--	--
04	Paint	Paint Spraying	15	0.01	12600	--	1.78	7.79	--	--	--	--	--	--	3.62	15.86	--	--
		NG Burning - Curing & Air Replacement	15	0.01	12600	5.50	0.04	0.18	--	--	0.00	0.01	0.45	1.98	0.03	0.13	0.54	2.36
05	Tank	Blowing Agent Tank	--	--	--	--	--	--	--	--	--	--	--	--	1.65	7.24	--	--
TOTAL EMISSIONS:							1.83	8.03	0.00	0.00	0.00	0.02	0.50	2.21	11.22	54.26	0.60	2.63

Allowable PM Emissions

15.99

Source No.	Emission Unit	Emission Source	Information Provided by Facility				Calculations Based on TN APC Chapter 7: Process Emission Standards Regulations				Controlled Potential PM		Uncontrolled Potential PM		Allowable Limits		
			Design Input (lbs./hr.)	Design Input (tons/hr.)	Flow Rate (cfm)	Design Heat Input (MMBtu/hr.)	PWR Table 2 (lbs./hr.)	0.02 gr./dscl (lbs./hr.)	0.25 gr./dscl (lbs./hr.)	Emission per Chapter 7 Rules (lbs./hr.)	lbs./hr.	tons/yr.	lbs./hr.	tons/yr.	Allowable (lbs./hr.)	Operating Hours	Allowable (tpy)
02	EPS Sandwich	Window Cutting	--	--	--	--	0.11	1.82	22.71	1.82	0.01	0.03	6.85	30.00	1.82	8760	7.96
03	Injection Doors	Heat Tunnel (NG Burning)	--	1.87	21189	--	5.29	3.63	45.41	5.29	0.00	0.02	0.00	0.02	5.29	8760	23.18
		Sawing	3741	1.87	3397	--	5.29	0.58	7.28	5.29	0.00	0.01	5.99	26.22	5.29	8760	23.18
04	Paint	Paint Spraying	15	0.01	12600	--	0.17	2.16	27.00	2.16	1.78	7.79	2.54	11.13	2.16	8760	9.46
		NG Burning - Curing & Air Replacement	15	0.01	12600	--	0.17	2.16	27.00	2.16	0.04	0.18	0.04	0.18	2.16	8760	9.46
TOTAL EMISSIONS:											1.83	8.03	15.42	67.55	16.72		73.25

Based on 1200-03-07-.04(1)
Based on 1200-03-06-.02(2)(a)
Based on 1200-03-07-.03(1)
Based on 1200-03-07-.04(1)
Based on 1200-03-06-.02(2)(a)

Allowable SO₂ Emissions

10.59

Source No.	Emission Unit	Emission Source	Information Provided by Facility				TN APC Chapter 14: Control of Sulfur Dioxide Emissions				Controlled Potential SO ₂		Uncontrolled Potential SO ₂		Allowable Limits		
			Design Input (lbs./hr.)	Design Input (tons/hr.)	Flow Rate (cfm)	Design Heat Input (MMBtu/hr.)	Non-Process Emission Source (lbs/hr)	Process Emissions Source (lbs/hr)	Emission per Chapter 14 Rules (lbs./hr.)		lbs./hr.	tons/yr.	lbs./hr.	tons/yr.	Allowable (lbs./hr.)	Operating Hours	Allowable (tpy)
03	Injection Doors	Heat Tunnel (NG Burning)	--	--	--	0.61	--	431.96	431.96		0.00	0.00	0.00	0.00	431.96	8760	1,891.96
04	Paint	NG Burning - Curing & Air Replacement	--	--	--	5.50	--	256.86	256.86		0.00	0.01	0.00	0.01	256.86	8760	1,125.05
TOTAL EMISSIONS:							--	--	--		0.00	0.02	0.00	0.02	688.82	--	3017.02

Based on 1200-03-14-.03(3)
Based on 1200-03-14-.03(3)

Permitted Emissions

Source No.	Emission Unit	Emission Source	Information Provided by Facility				[Limit (tpy)] / [Design Input (tons/hr.)] (hrs./yr.)	Actual = Controlled Potential PM		Facility Agreed Upon Permitted Limits												
			Design Input (lbs./hr.)	Design Input (tons/hr.)	Max. Annual Throughput (tons/yr.)	Throughput Restriction (tons/yr.)		lbs./hr.	tons/yr.	PM (lbs./hr.)	PM (tons/yr.)	PM ₁₀ (lbs./hr.)	PM ₁₀ (tons/yr.)	SO ₂ (lbs./hr.)	SO ₂ (tons/yr.)	CO (lbs./hr.)	CO (tons/yr.)	VOC (lbs./hr.)	VOC (tons/yr.)	NOX (lbs./hr.)	NOX (tons/yr.)	
01	Forming	Forming Door Hardware	457	0.2	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
02	EPS Sandwich Doors	EPS Foam Gluing	--	--	--	--	--	--	--	1.82	7.96	--	--	--	--	--	--	--	--	--		
		EPS Foam Imprinting	--	--	--	--	--	--	--	--	--	--	--	--	--	--	4.9	21.5	--	--		
		Window Cutting	--	0.0	10,600.0	--	--	0.01	0.03	--	--	--	--	--	--	--	--	--	--	--		
03	Injection Doors	Polyurethane Foam Injection	3,741	1.9	21189.0	--	--	--	--	5.3	23.2	--	--	--	--	--	--	--	--	--		
		Heat Tunnel (NG Burning)	--	--	--	--	--	0.00	0.02	--	--	--	--	0.1	0.2	5.9	25.9	0.1	0.3			
		Sawing	3,741	1.9	3397.0	--	--	0.00	0.01	--	--	--	--	--	--	--	--	--	--	--		
04	Paint	Paint Spraying	15	0.0	12600.0	--	--	1.78	7.79	--	--	--	--	--	--	--	--	--	--	--		
		NG Burning - Curing & Air Replacement	15	0.0	12600.0	--	--	0.04	0.18	--	--	--	--	--	--	--	--	--	--	--		
05	Tank	Blowing Agent Tank	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
TOTAL EMISSIONS:									1.83	8.03	7.11	31.14	0.00	0.00	0.00	0.00	0.05	0.22	10.82	47.40	0.06	0.26

INSIGNIFIC

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93-0118

1/23/2023

Source 01: Forming Door Hardware

Operation Hours:	24 hrs./day	[Application dated September 17, 2018]	Lubricant	Volume (gal)	Density (lb/gal)	Amount (lbs)
	7 days/wk.	[Application dated September 17, 2018]	921 DS	55	7.089	389.895
	52 wk./yr.	[Application dated September 17, 2018]	251 Roll	10	6.672	66.72
	365 days/yr.	[Application dated September 17, 2018]		Total:		456.615
Actual Operating Hours:	8,760 hrs./yr.					
Potential Operating Hours:	8,760 hrs./yr.					
Design Input:	457 lbs/yr	[Application dated September 17, 2018]				
	0.2283075 tons/hr.					
Flow Rate for Control Device:	N/A					
	ft ³ /min.	[Application dated September 17, 2018]				

Calculated Emissions (VOC Mass Balance)

921 DS 1MO

389.895 lbs/yr
90% VOC Content [Application dated September 17, 2018]
350.9055 lbs/yr
0.18 tpy

251 Roll Film

66.72 lbs/yr
99% VOC Content [Application dated September 17, 2018]
66.0528 lbs/yr
0.03 tpy

Total VOC: 0.21 tpy

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Source 02: EPS Foam Imprinting & Gluing

Operation Hours:	24 hrs./day	[Application dated September 17, 2018]	
	7 days/wk.	[Application dated September 17, 2018]	
	52 wk./yr.	[Application dated September 17, 2018]	
	365 days/yr.	[Application dated September 17, 2018]	
Actual Operating Hours:	8,760 hrs./yr.		
Potential Operating Hours:	8,760 hrs./yr.		
Production Rate:	75,000 doors/yr	[Application dated January 11, 2023]	***"Sandwich" doors o
Maximum Glue Input:	140,040 lbs/yr	[Application dated September 17, 2018]	
	70.02 tons/yr		
Flow Rate:	10,600 ft ³ /min.	[Application dated September 17, 2018]	

Calculated Emissions (Gluing)

PURMELT Adhesive

123,840 lbs/yr	Material usage	
5% VOC-HAP content		[Application dated September 17, 2018]
6192.00 lbs/yr	HAP-VOC	Methylenebis(phenylisocyanate) [MDI]
3.10 tpy	HAP-VOC	

TEROSON Adhesive

0.216 lbs/door	Material usage	[Application dated January 11, 2023]
16,200 lbs/yr	Material usage	
1.62% VOC content		[Application dated January 11, 2023]
262.44 lbs/yr	HAP-VOC	Methylenebis(phenylisocyanate) [MDI]
0.13 tpy	HAP-VOC	
3.23 tpy	HAP-VOC Emissions	Above HAP significance threshold

Calculated Emissions (EPS Foam) [Provided by Facility]

75,000 doors/yr	Production rate	
24 impressions/door		[Application dated September 17, 2018]
0.0334 loss/impression (ft3)		[Application dated September 17, 2018]
60,120 ft3/yr		
1.50% additional losses		[Application dated September 17, 2018]
61,022 ft3/yr	EPS Losses	
1.1 lbs/ft3	Density	[Application dated September 17, 2018]
5% VOC Content		[Application dated September 17, 2018]
0.10% HAP Content (styrene)		[Application dated September 17, 2018]
67123.98 lbs/yr	EPS Losses	
3356.199 lbs/yr	VOC Emissions	
1.6780995 tpy	VOC Emissions	
67.12398 lbs/yr	HAP Emissions	
0.03356199 tpy	HAP Emissions	

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Source 02: Sandwich Door Window Cutting

Operation Hours: 24 hrs./day [Application dated September 17, 2018]
7 days/wk. [Application dated September 17, 2018]
52 wk./yr. [Application dated September 17, 2018]
365 days/yr. [Application dated September 17, 2018]

Actual Operating Hours: 8,760 hrs./yr.
Potential Operating Hours: 8,760 hrs./yr.

Design Input: 75,000 doors/year [Application dated January 11, 2023] ***"Sandwich" doors or
Material Input: 30 tpy [Application dated November 3, 2020]
0.003 tons/hr

Flow Rate for Dust Collector: 10,600 ft³/min. [Application dated September 17, 2018]

Process Weight Rate Table II:

Design Input < 30 tons/hr.

$$E = 3.59P^{0.62}$$

$$E = 0.11 \text{ lbs./hr.}$$

At 0.02 gr./dscf:

$$PM = \frac{(0.02 \text{ [gr./dscf]}) * (\text{Flow Rate [ft}^3\text{/min.]}) * (60 \text{ [min./hr.]})}{7000 \text{ [lbs./gr.]}}$$

$$PM = 1.82 \text{ lbs./hr.}$$

At 0.25 gr./dscf:

$$PM = \frac{(0.25 \text{ [gr./dscf]}) * (\text{Flow Rate [ft}^3\text{/min.]}) * (60 \text{ [min./hr.]})}{7000 \text{ [lbs./gr.]}}$$

$$PM = 22.71 \text{ lbs./hr.}$$

Calculated Emissions (Mass Balance)

100% Particulate loading (from mass balance) [Application dated November 3, 2020]
6.849315068 lbs/hr Uncontrolled Emissions
30 tpy Uncontrolled Emissions

99.90% Dust collector efficiency [Application dated November 3, 2020]
0.006849315 lbs/hr Controlled Emissions
0.03 tpy Controlled Emissions

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Source 03: Polyurethane Foam Injection

Operation Hours: 24 hrs./day [Application dated January 11, 2023]
 7 days/wk. [Application dated January 11, 2023]
 52 wk./yr. [Application dated January 11, 2023]
 365 days/yr. [Application dated January 11, 2023]

Actual Operating Hours: 8,760 hrs./yr.
 Potential Operating Hours: 8,760 hrs./yr.

Production Rate: 105,000 doors/yr [Application dated January 11, 2023] ****"Polyurethane Injection Doors"

Input 1: Pentane 77.2 lbs/hr [Application dated January 11, 2023]
 Input 2: MDI 2,282 lbs/hr [Application dated September 17, 2018]
 Input 3: Polyol 1,382 lbs/hr [Application dated January 11, 2023]
 Total Material Input: 3,741 lbs/hr
 1.87065 tons/hr

Flow Rate: 21,189 ft³/min. [Application dated September 17, 2018]

Calculated Emissions (Facility Data)

Pentane

77.2 lbs/hr Material usage
 7.5% loss fraction [Application dated September 17, 2018]
 5.79 lbs/hr Pentane VOC
 25.36 tpy Pentane VOC

MDI From "MDI Emissions Reporting Guidelines for the Polyurethanes Industry" Section 10.0, "Stack Emissions of MDI from Doc

$$L_c = \left(\frac{v_{air} P_{vap} T_o}{v_{gas} P_o T_p} \right) M_w k$$

v_{air} = 1,470,000.00 ft³/yr [Application dated September 17, 2018]
 v_{gas} = 359.00 ft³/lb*mole [Application dated September 17, 2018]
 P_{vap} = 0.0014 mmHg MDI [Application dated September 17, 2018]
 P_o = 760 mmHg air [Application dated September 17, 2018]
 T_o = 273 K [Application dated September 17, 2018]
 T_p = 343.15 K [Application dated September 17, 2018]
 M_w = 250.26 MDI [Application dated September 17, 2018]
 k = 0.659 [Application dated September 17, 2018]

L_c = 0.961927318 lbs/yr MDI VOC-HAP
 $L_{c,max}$ = 1.106216416 lbs/yr MDI VOC-HAP
 0.000553108 tpy MDI VOC-HAP

Total VOC

5.79 lbs/hr
 25.36 tpy

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Source 03: Heat Tunnel (NG-Fired)

Operation Hours: 24 hrs./day [Application dated January 11, 2023]
 7 days/wk. [Application dated January 11, 2023]
 52 wk./yr. [Application dated January 11, 2023]
 365 days/yr. [Application dated January 11, 2023]

Actual Operating Hours: 8,760 hrs./yr.
 Potential Operating Hours: 8,760 hrs./yr.

Heat Input Rate: 0.614 MMBtu/hr [Application dated January 11, 2023]
 Material Input Rate: 1.871 tons/hr **from Tab 03 Injection

Date Constructed: 2018 [Application dated January 11, 2023]

Flow Rate: 21,189 ft³/min. [Application dated September 17, 2018]

Allowable Emissions**Process Weight Rate Table II:**

Design Input < 30 tons/hr.
 $E = 3.59p^{0.62}$
 $E = 5.29$ lbs./hr.

At 0.02 gr./dscf:

PM = $\frac{(0.02 \text{ [gr./dscf]}) \times (\text{Flow Rate [ft}^3\text{/min.]}) \times (60 \text{ [min./hr.]})}{7000 \text{ [lbs./gr.]}}$

PM = 3.63 lbs./hr.

At 0.25 gr./dscf:

PM = $\frac{(0.25 \text{ [gr./dscf]}) \times (\text{Flow Rate [ft}^3\text{/min.]}) \times (60 \text{ [min./hr.]})}{7000 \text{ [lbs./gr.]}}$

PM = 45.41 lbs./hr.

SO₂

TAPCR 1200-03-14-.03(3)

Class VI County 2000.0 ppmv dry
 2911.4 ppmw Assume 100% conversion to SO₂ has occurred, use SO₂ MW
 148365.38 lbs/hr total air outflow

431.9553 lbs/hr SO₂ outflow

1891.9642 tons/yr

$E = 0.600$

Potential Emissions

Pollutant		MMBtu/hr.		lb./MMBtu		lbs./hr.		hr./yr.		lbs./ton		ton/yr.
PM	=	0.614	x	0.007451	=	0.00	x	8,760	/	2,000	=	0.02
SO ₂	=	0.614	x	0.000588	=	0.0004	x	8,760	/	2,000	=	0.002
CO	=	0.614	x	0.082353	=	0.05	x	8,760	/	2,000	=	0.22
VOC	=	0.614	x	0.005392	=	0.00	x	8,760	/	2,000	=	0.01
NO _x	=	0.614	x	0.098039	=	0.06	x	8,760	/	2,000	=	0.26

AP 42, Chapter 1.4: Natural Gas Combustion**Tables 1.4-1 and 1.4-2**

Pollutant	Emission Factor (lbs./10 ⁶ scf)		Conversion Factor (Btu/ft ³)	Factor (lbs./MMBtu)
PM	7.6	/	1020	0.00745098
SO ₂	0.6	/	1020	0.000588235
CO	84	/	1020	0.082352941
VOC	5.5	/	1020	0.005392157
NO _x	100	/	1020	0.098039216

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Source 03: Injection Door Sawing

Operation Hours: 24 hrs./day [Application dated September 17, 2018]
7 days/wk. [Application dated September 17, 2018]
52 wk./yr. [Application dated September 17, 2018]
365 days/yr. [Application dated September 17, 2018]

Actual Operating Hours: 8,760 hrs./yr.
Potential Operating Hours: 8,760 hrs./yr.

Design Input: 105,000 doors/yr [Application dated January 11, 2023] ****"Polyurethane Injection Doors"
Material Input: 3,741 lbs/hr **from Tab 03 Injection
1.871 tons/hr

Flow Rate for Baghouse: 3,397 dsft³/min. [Application dated September 17, 2018]

Process Weight Rate Table II:

Design Input < 30 tons/hr.

$$E = 3.59P^{0.62}$$

$$E = 5.29 \text{ lbs./hr.}$$

At 0.02 gr./dscf:

$$PM = \frac{(0.02 \text{ [gr./dscf]}) * (\text{Flow Rate [ft}^3/\text{min.]}) * (60 \text{ [min./hr.]})}{7000 \text{ [lbs./gr.]}}$$

$$PM = 0.58 \text{ lbs./hr.}$$

At 0.25 gr./dscf:

$$PM = \frac{(0.25 \text{ [gr./dscf]}) * (\text{Flow Rate [ft}^3/\text{min.]}) * (60 \text{ [min./hr.]})}{7000 \text{ [lbs./gr.]}}$$

$$PM = 7.28 \text{ lbs./hr.}$$

Calculated Emissions (Mass Balance)

0.16% Product volume loss [Application dated September 17, 2018]
5.98608 lbs/hr Uncontrolled PM Emissions (assumes 100% lost material is particulate foam**)
26.2190304 tpy Uncontrolled PM Emissions

99.95% Baghouse efficiency [Additional information dated January 31, 2023]
0.00299304 lbs/hr Controlled Emissions
0.013109515 tpy Controlled Emissions

0.16% Product volume loss [Application dated September 17, 2018]
0.12352 lbs/hr VOC Emissions (assumes 100% lost material is pentane**)
0.54 tpy VOC Emissions

** while both cannot be true, must assume so without analysis of lost material

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Source 04: Paint Application

Operation Hours: 24 hrs./day [Application dated September 17, 2018]
 7 days/wk. [Application dated September 17, 2018]
 52 wk./yr. [Application dated September 17, 2018]
 365 days/yr. [Application dated September 17, 2018]

Actual Operating Hours: 8,760 hrs./yr.
 Potential Operating Hours: 8,760 hrs./yr.

Design Input: 14.6 lbs/hr [Application dated September 17, 2018]
 0.0073 tons/hr.

Heat Input Rate: 5.5 MMBtu/hr [Application dated September 17, 2018]
 **Includes both curing oven and replacement air, single fuel-burning installation

Flow Rate for Control Device: 12,600 ft³/min. [Application dated September 17, 2018]

Process Weight Rate Table II:

Design Input < 30 tons/hr.

$$E = 3.59P^{0.62}$$

$$E = 0.17 \text{ lbs./hr.}$$

At 0.02 gr./dscf:

$$PM = \frac{(0.02 \text{ [gr./dscf]}) * (\text{Flow Rate [ft}^3\text{/min.)}) * (60 \text{ [min./hr.]})}{7000 \text{ [lbs./gr.]}}$$

$$PM = 2.16 \text{ lbs./hr.}$$

At 0.25 gr./dscf:

$$PM = \frac{(0.25 \text{ [gr./dscf]}) * (\text{Flow Rate [ft}^3\text{/min.)}) * (60 \text{ [min./hr.]})}{7000 \text{ [lbs./gr.]}}$$

$$PM = 27.00 \text{ lbs./hr.}$$

SO₂

TAPCR 1200-03-14-.03(3)

Class VI County

2000.0 ppmv dry
 2911.4 ppmw Assume 100% conversion to SO₂ has occurred, use SO₂ MW
 88225.2 lbs/hr total air outflow

$$256.8614253 \text{ lbs/hr SO}_2 \text{ outflow}$$

$$1125.053043 \text{ tons/yr}$$

Calculated Emissions (PM & VOC Mass Balance)**Carbithane 11**

14.6 lbs/hr
 24.8% VOC Content [Application dated September 17, 2018]
 58.0% Solids Content [Application dated September 17, 2018]
 30.0% Overspray [Application dated September 17, 2018]
 30.0% Control efficiency [Additional info email dated January 23, 2022]

3.6208 lbs/hr VOC emissions
 15.86 tpy VOC emissions

2.54 lbs/hr Uncontrolled PM emissions
 11.13 tpy Uncontrolled PM emissions
 1.78 lbs/hr Controlled PM emissions
 7.79 tpy Controlled PM emissions

NG Burning Emissions

Pollutant		MMBtu/hr.		lb./MMBtu		lbs./hr.		hr./yr.		lbs./ton		ton/yr.
PM	=	5.500	x	0.007	=	0.04	x	8,760	/	2,000	=	0.18
SO ₂	=	5.500	x	6E-04	=	0.0032	x	8,760	/	2,000	=	0.014
CO	=	5.500	x	0.082	=	0.45	x	8,760	/	2,000	=	1.98
VOC	=	5.500	x	0.005	=	0.03	x	8,760	/	2,000	=	0.13
NO _x	=	5.500	x	0.098	=	0.54	x	8,760	/	2,000	=	2.36

AP 42, Chapter 1.4: Natural Gas Combustion

Tables 1.4-1 and 1.4-2

Pollutant	Factor		Factor	Factor
			(lbs./MM)	
PM	7.6	/	1020	0.007451
SO ₂	0.6	/	1020	0.000588
CO	84	/	1020	0.082353
VOC	5.5	/	1020	0.005392
NO _x	100	/	1020	0.098039

Hormann LLC

93-0118

1/23/2023

Source 05: Blowing Agent Tank

Operation Hours:	24 hrs./day	[Application dated September 17, 2018]
	7 days/wk.	[Application dated September 17, 2018]
	52 wk./yr.	[Application dated September 17, 2018]
	365 days/yr.	[Application dated September 17, 2018]

Actual Operating Hours:	8,760 hrs./yr.
Potential Operating Hours:	8,760 hrs./yr.

Tank Volume:	12,000 gal	[Application dated September 17, 2018]
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Calculated Emissions (VOC)

12,000 gal	Tank volume
100% VOC Content	[Application dated September 17, 2018]

"Fugitive VOC Emissions in the Synthetic Organic Chemical Manufacturing Industry ", December 1984 (EPA-625/10-84-004) Table 3 Emission Factors

Component	# of Components**	EF (kg/hr/comp)	Emissions (kg/hr)	[**Application dated September 17, 2018]
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Valves	12	0.0071	0.0852
Pump Seals	2	0.0494	0.0988
Line Connections	27	0.0017	0.0459
Relief Valves	5	0.104	0.52
			0.7499 kg/hr
			1.65322954 lbs/hr

1.65322954 lbs/hr	VOC Emissions
7.241145385 tpy	VOC Emissions