

# Emission Sources - Maximum Allowable Emission Rates

Permit Number 167820

This table lists the maximum allowable emission rates and all sources of air contaminants on the applicant's property covered by this permit. The emission rates shown are those derived from information submitted as part of the application for permit and are the maximum rates allowed for these facilities, sources, and related activities. Any proposed increase in emission rates may require an application for a modification of the facilities covered by this permit.

## Air Contaminants Data

Emission Point No. (1)	Source Name (2)	Air Contaminant Name (3)	Emission Rates (5)	
			lbs/hour	TPY (4)
3-AS-1 through 3-AS-38, 3-BS-1 through 3-BS-30, 3-TO-1 through 3-TO-12	Combined Non-POC Process Emissions from FAB3 operations and storage tank loading, working, and breathing emissions routed through RTOs and aqueous acid and base scrubbers.  *see footnote 7 for FAB3 process source information. *see footnote 8 for FAB3 storage tank information. *see footnote 9 for RTO maintenance operating condition information.	VOC	161.02	215.58
		Exempt Solvents	53.34	228.70
		Inorganics	23.44	103.01
		Fluorine (6)	0.33	1.46
		NO <sub>x</sub>	2.88	12.61
		CO	0.65	2.83
		SO <sub>2</sub>	0.13	0.58
		PM	7.09	31.03
		PM <sub>10</sub>	7.09	31.03
		PM <sub>2.5</sub>	7.09	31.03
3-AS-1 through 3-AS-38	Combined POC Emissions from 1,254 (0.037 MMBtu/hr) FAB3 POU control devices.	VOC	0.25	1.09
		NO <sub>x</sub>	31.49	137.94
		CO	31.49	137.94
		SO <sub>2</sub>	0.03	0.12
		PM	0.17	0.75
		PM <sub>10</sub>	0.17	0.75
		PM <sub>2.5</sub>	0.09	0.38
3-TO-1, 3-TO-2, 3-TO-3, 3-TO-4, 3-TO-5, 3-TO-6, 3-TO-7, 3-TO-8, 3-TO-9, 3-TO-10, 3-TO-11, 3-TO-12	Combined POC emissions from 12 Thermal Oxidizers (TOs) 1 through 12.  TOs 1, 2, 5, and 6 – 9 MMBtu/hr TOs 7, 8, 9, 10, 11, and 12 - 7 MMBtu/hr TOs 3 and 4 – 6.3 MMBtu/hr	VOC	0.49	2.14
		NO <sub>x</sub>	0.61	2.67
		CO	6.49	28.43
		SO <sub>2</sub>	1.27	5.56
		PM	0.68	2.96
		PM <sub>10</sub>	0.68	2.96
		PM <sub>2.5</sub>	0.68	2.96

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3-B-1 through 3-B-22	<p>Combined emissions from 22 (29.2 MMBtu/hr) boilers fired concurrently.</p> <p>All 22 boilers may be operated concurrently while firing natural gas, or, 21 boilers firing natural gas may be operated concurrently with any 1 boiler firing diesel fuel.</p>	VOC	6.42	28.14
		NOx	6.75	29.54
		CO	12.01	52.62
		SO <sub>2</sub>	1.09	4.78
		PM	6.42	28.14
		PM <sub>10</sub>	6.42	28.14
		PM <sub>2.5</sub>	3.21	14.07
3-B-1 through 3-B-22	<p>Combined emissions from 22 (227.3 gal/hr) boilers firing diesel fuel.</p> <p>The boilers may be fired on diesel fuel for up to 30 hrs per year per boiler for a total of 660 hrs/yr. Only 1 boiler may be test fired on diesel fuel at a time.</p>	VOC	0.05	0.01
		NOx	4.55	1.50
		CO	1.14	0.37
		SO <sub>2</sub>	1.61	0.53
		PM	0.75	0.25
		PM <sub>10</sub>	0.75	0.25
		PM <sub>2.5</sub>	0.52	0.17
3-GEN-1 through 3-GEN-28	<p>Emissions from 28 diesel-fired 2,682 HP Tier 4 emergency generator engines.</p> <p>Each generator may be operated for up to 50 hrs per year. Up to 14 generators may be tested at any one time.</p>	VOC	11.72	0.59
		NOx	41.32	2.07
		CO	215.86	10.79
		SO <sub>2</sub>	15.19	0.76
		PM	2.47	0.12
		PM <sub>10</sub>	2.47	0.12
		PM <sub>2.5</sub>	1.23	0.06
3-BTLCRSH1	Fugitive emissions from Bottle Crusher 1	VOC	0.15	0.15
3-BTLCRSH2	Fugitive emissions from Bottle Crusher 2	VOC	0.15	0.15
3-NH3FUG	Fugitive emissions from Ammonia Cylinder piping.	NH <sub>3</sub>	<0.01	0.01
3-BSGSFUG1	Bulk Specialty Gas Storage Facility Fugitive Emissions Area 1	Exempt Solvents	0.22	0.04
		Inorganics	0.17	0.03

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Emission Point No. (1)	Source Name (2)	Air Contaminant Name (3)	Emission Rates (5)	
			lbs/hour	TPY (4)
3-BSGSFUG2	Bulk Specialty Gas Storage Facility Fugitive Emission Area 2	PM	0.01	<0.01
		PM <sub>10</sub>	0.01	<0.01
		PM <sub>2.5</sub>	0.01	<0.01
3-TANKFUG1	FAB3 Tank Farm Area 1 Pipe and Fitting Fugitive Emissions	VOC	0.07	0.29
		Exempt Solvents	0.39	1.73
		Inorganics	0.03	0.14
3-TANKFUG2	FAB3 Tank Farm Area 2 Pipe and Fitting Fugitive Emissions	VOC	0.02	0.1
		Exempt Solvents	0.13	0.58
		Inorganics	0.01	0.05
All Emission Points at the Site	All Sources at the Site	Individual HAP	---	<10.00
		Total HAPs	---	<25.00

- (1) Emission point identification - either specific equipment designation or emission point number from plot plan.
- (2) Specific point source name. For fugitive sources, use area name or fugitive source name.
- (3) Exempt Solvent - Those carbon compounds or mixtures of carbon compounds used as solvents which have been excluded from the definition of volatile organic compound.
- VOC - volatile organic compounds as defined in Title 30 Texas Administrative Code § 101.1
- NO<sub>x</sub> - total oxides of nitrogen
- SO<sub>2</sub> - sulfur dioxide
- PM - total particulate matter, suspended in the atmosphere, including PM<sub>10</sub> and PM<sub>2.5</sub>, as represented
- PM<sub>10</sub> - total particulate matter equal to or less than 10 microns in diameter, including PM<sub>2.5</sub>, as represented
- PM<sub>2.5</sub> - particulate matter equal to or less than 2.5 microns in diameter
- CO - carbon monoxide
- HAP - hazardous air pollutant as listed in § 112(b) of the Federal Clean Air Act or Title 40 Code of Federal Regulations Part 63, Subpart C
- (4) Compliance with annual emission limits (tons per year) is based on a 12 month rolling period.
- (5) The allowable emission rates include planned maintenance, startup, and shutdown activities.
- (6) Fluorine emissions are included in the allowable emission rates for inorganics.
- (7) FAB3 process emissions result from numerous operations in the semiconductor manufacturing process. These emissions consist of VOC, Exempt Solvents, NO<sub>x</sub>, CO, SO<sub>2</sub>, PM, PM<sub>10</sub>, PM<sub>2.5</sub>, and Inorganics (including fluorine and HF). These process emissions are not the result of any combustion process.

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(8) FAB3 Storage tank working and breathing emission source information

FIN	EPN	Source Description
3-ST-1	3-AS-1 to 3-AS-7	10,500 Gallon Storage Tank
3-ST-2	3-AS-1 to 3-AS-7	2,100 Gallon Storage Tank
3-ST-3	3-AS-1 to 3-AS-7	5,460 Gallon Storage Tank
3-ST-8	3-TO-1 and 3-TO-2	4,200 Gallon Storage Tank
3-ST-9	3-TO-1 and 3-TO-2	4,200 Gallon Storage Tank
3-ST-10	3-TO-1 and 3-TO-2	4,200 Gallon Storage Tank
3-ST-12	3-AS-1 to 3-AS-7	31,080 Gallon Storage Tank
3-ST-14	3-AS-1 to 3-AS-7	7,560 Gallon Storage Tank
3-ST-15	3-AS-1 to 3-AS-7	3,360 Gallon Storage Tank
3-ST-16	3-TO-1 and 3-TO-2	3,500 Gallon Storage Tank
3-ST-21	3-AS-1 to 3-AS-7	12,180 Gallon Storage Tank
3-ST-22	3-AS-1 to 3-AS-7	9,660 Gallon Storage Tank
3-ST-23	3-AS-1 to 3-AS-7	8,400 Gallon Storage Tank
3-ST-24	3-TO-1 and 3-TO-2	6,300 Gallon Storage Tank
3-ST-26	3-AS-1 to 3-AS-7	6,300 Gallon Storage Tank
3-ST-27	3-TO-1 and 3-TO-2	6,300 Gallon Storage Tank
3-ST-28	3-TO-1 and 3-TO-2	6,300 Gallon Storage Tank
3-ST-29	3-AS-1 to 3-AS-7	6,300 Gallon Storage Tank
3-ST-30	3-AS-1 to 3-AS-7	11,500 Gallon Storage Tank
3-ST-31	3-AS-1 to 3-AS-7	11,500 Gallon Storage Tank
3-ST-32	3-AS-1 to 3-AS-7	5,637 Gallon Storage Tank
3-ST-33	3-TO-1 and 3-TO-2	2,000 Gallon Storage Tank
3-ST-34	3-AS-1 to 3-AS-7	2,800 Gallon Storage Tank
3-ST-35	3-AS-1 to 3-AS-7	16,380 Gallon Storage Tank
3-ST-36	3-AS-1 to 3-AS-7	16,380 Gallon Storage Tank
3-ST-37	3-AS-1 to 3-AS-7	16,380 Gallon Storage Tank
3-ST-38	3-TO-1 and 3-TO-2	5,460 Gallon Storage Tank

(9) FAB3 Thermal Oxidizer maintenance operating condition information.

Manufacturing operations that vent to the rotary concentrator/RTO shall be limited to 60 hours of uncontrolled operation over a rolling 12-month period during times when the rotary concentrator/RTO is off-line for maintenance or repair.

Date: **NOT DATED**

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