

Emission Sources - Maximum Allowable Emission Rates

Permit Number 172175

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	
			lbs/hour	TPY (4)
North Plant				
001	Ingot Growth - North 1	PM	0.04	0.18
		PM ₁₀	0.04	0.18
		PM _{2.5}	0.04	0.18
		Argon	64.54	282.89
		Silicon Oxide	0.03	0.13
		Silicon Dioxide	0.01	0.04
002	Ingot Growth - North 2	PM	0.04	0.18
		PM ₁₀	0.04	0.18
		PM _{2.5}	0.04	0.18
		Argon	64.54	282.89
		Silicon Oxide	0.03	0.13
		Silicon Dioxide	0.01	0.04
003	Ingot Growth - North 3	PM	0.04	0.18
		PM ₁₀	0.04	0.18
		PM _{2.5}	0.04	0.18
		Argon	64.54	282.89
		Silicon Oxide	0.03	0.13
		Silicon Dioxide	0.01	0.04
004	Ingot Growth - North 4	PM	0.04	0.18
		PM ₁₀	0.04	0.18
		PM _{2.5}	0.04	0.18
		Argon	64.54	282.89
		Silicon Oxide	0.03	0.13
		Silicon Dioxide	0.01	0.04
005	Ingot Growth - North 5	PM	0.04	0.18
		PM ₁₀	0.04	0.18
		PM _{2.5}	0.04	0.18
		Argon	64.54	282.89
		Silicon Oxide	0.03	0.13

Emission Sources - Maximum Allowable Emission Rates

		Silicon Dioxide	0.01	0.04
006	Ingot Growth - North 6	PM	0.04	0.18
		PM ₁₀	0.04	0.18
		PM _{2.5}	0.04	0.18
		Argon	64.54	282.89
		Silicon Oxide	0.03	0.13
		Silicon Dioxide	0.01	0.04
007	Ingot Growth - North 7	PM	0.04	0.18
		PM ₁₀	0.04	0.18
		PM _{2.5}	0.04	0.18
		Argon	64.54	282.89
		Silicon Oxide	0.03	0.13
		Silicon Dioxide	0.01	0.04
008	Ingot Growth - North 8	PM	0.04	0.18
		PM ₁₀	0.04	0.18
		PM _{2.5}	0.04	0.18
		Argon	64.54	282.89
		Silicon Oxide	0.03	0.13
		Silicon Dioxide	0.01	0.04
009	Ingot Growth - North 9	PM	0.04	0.18
		PM ₁₀	0.04	0.18
		PM _{2.5}	0.04	0.18
		Argon	64.54	282.89
		Silicon Oxide	0.03	0.13
		Silicon Dioxide	0.01	0.04
021	Concentrated Acid Etch - North	NO _x	0.33	1.37
		HF	<0.01	0.01
		HNO ₃	<0.01	0.01
	HF Bulk Tank 1 - North	HF	0.05	<0.01
	HF Day Tank 1 - North	HF	<0.01	<0.01
	HNO ₃ Bulk Tank 1 - North	HNO ₃	0.01	<0.01
	HNO ₃ Day Tank 1 - North	HNO ₃	<0.01	<0.01
	Fugitive - Chemical Room - North	VOC	0.16	0.70
		HF	0.01	0.05
		HNO ₃	0.02	0.10
		Sulfuric Acid	0.02	0.07

Emission Sources - Maximum Allowable Emission Rates

		Lactic Acid	0.03	0.15
		Hydrogen Peroxide	0.01	0.06
		Diethylene glycol butyl ether	0.08	0.35
		Ethylene glycol butyl ether	0.08	0.35
		Chlorine Gas	0.02	0.07
		Hydrogen Sulfide	0.08	0.35
	MSS - Wafer Clean - North	VOC	0.09	<0.01
		Hydrogen peroxide	<0.01	<0.01
		Diethylene glycol butyl ether	<0.01	<0.01
		Ethylene glycol butyl ether	0.09	<0.01
	MSS - Concentrated Acid Etch – North	HF	0.01	<0.01
		HNO ₃	<0.01	<0.01
	MSS - HF Bulk Tank 1 - North	HF	0.05	<0.01
	MSS - HF Day Tank 1 - North	HF	<0.01	<0.01
	MSS - HNO ₃ Bulk Tank 1 - North	HNO ₃	0.01	<0.01
	MSS - HNO ₃ Day Tank 1 - North	HNO ₃	<0.01	<0.01
022	Redundant Debonding Soak – North	Lactic Acid	<0.01	<0.01
	Lactic Bulk Tank 1 - North	Lactic Acid	<0.01	<0.01
	Lactic Day Tank 1 - North	Lactic Acid	<0.01	<0.01
	MSS - Redundant Debonding Soak – North	Lactic Acid	<0.01	<0.01
	MSS - Lactic Bulk Tank 1 - North	Lactic Acid	<0.01	<0.01
	MSS - Lactic Day Tank 1 - North	Lactic Acid	<0.01	<0.01
024	Wafer Clean – North	VOC	0.05	0.04
		H ₂	3.98	16.58
		Hydrogen Peroxide	0.01	0.02
		Diethylene glycol butyl ether	<0.01	<0.01
		Ethylene glycol butyl ether	0.05	0.04
	Hydrogen Peroxide Bulk Tank 1 – North	Hydrogen peroxide	0.01	<0.01
	Hydrogen Peroxide Day Tank 1 – North	Hydrogen peroxide	<0.01	<0.01
	Additive Bulk Tank 1 - North	VOC	0.15	<0.01
		Diethylene glycol butyl ether	<0.01	<0.01
		Ethylene glycol butyl ether	0.15	<0.01
	Additive Day Tank 1 - North	VOC	0.01	<0.01
		Diethylene glycol butyl ether	<0.01	<0.01

Emission Sources - Maximum Allowable Emission Rates

		Ethylene glycol butyl ether	0.01	<0.01
	MSS - Hydrogen Peroxide Bulk Tank 1 – North	Hydrogen Peroxide	0.01	<0.01
	MSS - Hydrogen Peroxide Day Tank 1 – North	Hydrogen Peroxide	<0.01	<0.01
	MSS - Additive Bulk Tank 1 - North	VOC	0.342	<0.01
		Diethylene glycol butyl ether	0.189	<0.01
		Ethylene glycol butyl ether	0.153	<0.01
	MSS - Additive Day Tank 1 - North	VOC	0.023	<0.01
		Diethylene glycol butyl ether	0.013	<0.01
		Ethylene glycol butyl ether	0.01	<0.01
034-067	Cooling Towers – North	PM	1.47	6.44
		PM ₁₀	0.99	4.35
		PM _{2.5}	<0.01	0.02
102-111	Back-Up Engines - North	PM	0.08	<0.01
		PM ₁₀	0.08	<0.01
		PM _{2.5}	0.08	<0.01
		VOC	0.80	0.04
		NO _x	1.68	0.08
		SO ₂	0.03	<0.01
		CO	14.74	0.74
123	Fugitives - North Building	HF	<0.01	<0.01
		HNO ₃	<0.01	<0.01
124	Fugitives - North Outdoors	HF	<0.01	<0.01
		HNO ₃	<0.01	<0.01
South Plant				
010	Ingot Growth - South 1	PM	0.04	0.18
		PM ₁₀	0.04	0.18
		PM _{2.5}	0.04	0.18
		Argon	64.54	282.89
		Silicon Oxide	0.03	0.13
		Silicon Dioxide	0.01	0.04
011	Ingot Growth - South 2	PM	0.04	0.18
		PM ₁₀	0.04	0.18
		PM _{2.5}	0.04	0.18
		Argon	64.54	282.89
		Silicon Oxide	0.03	0.13

Emission Sources - Maximum Allowable Emission Rates

		Silicon Dioxide	0.01	0.04
012	Ingot Growth - South 3	PM	0.04	0.18
		PM ₁₀	0.04	0.18
		PM _{2.5}	0.04	0.18
		Argon	64.54	282.89
		Silicon Oxide	0.03	0.13
		Silicon Dioxide	0.01	0.04
013	Ingot Growth - South 4	PM	0.04	0.18
		PM ₁₀	0.04	0.18
		PM _{2.5}	0.04	0.18
		Argon	64.54	282.89
		Silicon Oxide	0.03	0.13
		Silicon Dioxide	0.01	0.04
014	Ingot Growth - South 5	PM	0.04	0.18
		PM ₁₀	0.04	0.18
		PM _{2.5}	0.04	0.18
		Argon	64.54	282.89
		Silicon Oxide	0.03	0.13
		Silicon Dioxide	0.01	0.04
015	Ingot Growth - South 6	PM	0.04	0.18
		PM ₁₀	0.04	0.18
		PM _{2.5}	0.04	0.18
		Argon	64.54	282.89
		Silicon Oxide	0.03	0.13
		Silicon Dioxide	0.01	0.04
016	Ingot Growth - South 7	PM	0.04	0.18
		PM ₁₀	0.04	0.18
		PM _{2.5}	0.04	0.18
		Argon	64.54	282.89
		Silicon Oxide	0.03	0.13
		Silicon Dioxide	0.01	0.04
017	Ingot Growth - South 8	PM	0.04	0.18
		PM ₁₀	0.04	0.18
		PM _{2.5}	0.04	0.18
		Argon	64.54	282.89
		Silicon Oxide	0.03	0.13

Emission Sources - Maximum Allowable Emission Rates

		Silicon Dioxide	0.01	0.04
018	Ingot Growth - South 9	PM	0.04	0.18
		PM ₁₀	0.04	0.18
		PM _{2.5}	0.04	0.18
		Argon	64.54	282.89
		Silicon Oxide	0.03	0.13
		Silicon Dioxide	0.01	0.04
122	Concentrated Acid Etch – South	NO _x	0.33	1.37
		HF	<0.01	0.01
		HNO ₃	<0.01	0.01
	HF Bulk Tank 2 – South	HF	0.05	<0.01
	HF Day Tank 2 – South	HF	<0.01	<0.01
	HNO ₃ Bulk Tank 2 – South	HNO ₃	0.01	<0.01
	HNO ₃ Day Tank 2 – South	HNO ₃	<0.01	<0.01
	Fugitive - Chemical Room - South	VOC	0.16	0.70
		HF	0.01	0.05
		HNO ₃	0.02	0.10
		Sulfuric Acid	0.02	0.07
		Lactic Acid	0.03	0.15
		Hydrogen Peroxide	0.01	0.06
		Diethylene glycol butyl ether	0.08	0.35
		Ethylene glycol butyl ether	0.08	0.35
		Chlorine Gas	0.02	0.07
		Hydrogen Sulfide	0.08	0.35
	MSS - Concentrated Acid Etch – South	HF	0.01	<0.01
		HNO ₃	<0.01	<0.01
	MSS - HF Bulk Tank 2 – South	HF	0.05	<0.01
	MSS - HF Day Tank 2 – South	HF	<0.01	<0.01
	MSS - HNO ₃ Bulk Tank 2 – South	HNO ₃	0.01	<0.01
	MSS - HNO ₃ Day Tank 2 – South	HNO ₃	<0.01	<0.01
023	Redundant Debonding Soak – South	Lactic Acid	<0.01	<0.01
	Lactic Bulk Tank 2 – South	Lactic Acid	<0.01	<0.01
	Lactic Day Tank 2 – South	Lactic Acid	<0.01	<0.01
	MSS - Redundant Debonding Soak – South	Lactic Acid	<0.01	<0.01
	MSS - Lactic Bulk Tank 2 – South	Lactic Acid	<0.01	<0.01

Emission Sources - Maximum Allowable Emission Rates

	MSS - Lactic Day Tank 2 – South	Lactic Acid	<0.01	<0.01
025	Wafer Clean – South	VOC	0.05	0.04
		H ₂	3.98	16.58
		Hydrogen Peroxide	0.01	0.04
		Diethylene glycol butyl ether	<0.01	<0.01
		Ethylene glycol butyl ether	0.05	0.04
	Hydrogen Peroxide Bulk Tank 2 – South	Hydrogen Peroxide	0.01	<0.01
	Hydrogen Peroxide Day Tank 2 – South	Hydrogen Peroxide	<0.01	<0.01
	Additive Bulk Tank 2 – South	VOC	0.15	<0.01
		Diethylene glycol butyl ether	<0.01	<0.01
		Ethylene glycol butyl ether	0.15	<0.01
	Additive Day Tank 2 – South	VOC	0.01	<0.01
		Diethylene glycol butyl ether	<0.01	<0.01
		Ethylene glycol butyl ether	0.01	<0.01
	MSS - Wafer Clean – South	VOC	0.09	<0.01
		Hydrogen Peroxide	<0.01	<0.01
		Diethylene glycol butyl ether	<0.01	<0.01
		Ethylene glycol butyl ether	0.09	<0.01
	MSS - Hydrogen Peroxide Bulk Tank 2 – South	Hydrogen Peroxide	0.01	<0.01
	MSS - Hydrogen Peroxide Day Tank 2 – South	Hydrogen Peroxide	<0.01	<0.01
	MSS - Additive Bulk Tank 2 – South	VOC	0.342	<0.01
		Diethylene glycol butyl ether	0.189	<0.01
		Ethylene glycol butyl ether	0.153	<0.01
	MSS - Additive Day Tank 2 - South	VOC	0.023	<0.01
		Diethylene glycol butyl ether	0.013	<0.01
		Ethylene glycol butyl ether	0.010	<0.01
068-101	Cooling Towers – South	PM	1.47	6.44
		PM ₁₀	0.99	4.35
		PM _{2.5}	<0.01	0.02
112-121	Back-Up Engines – South	PM	0.08	<0.01
		PM ₁₀	0.08	<0.01
		PM _{2.5}	0.08	<0.01
		VOC	0.80	0.04
		NO _x	1.68	0.08

Emission Sources - Maximum Allowable Emission Rates

		SO ₂	0.03	<0.01
		CO	14.74	0.74
125	Fugitives - South Building	HF	<0.01	<0.01
		HNO ₃	<0.01	<0.01
126	Fugitives - South Outdoors	HF	<0.01	<0.01
		HNO ₃	0.01	0.05
Additional Sources				
026	Firewater Pump(s)	PM	<0.01	<0.01
		PM ₁₀	<0.01	<0.01
		PM _{2.5}	<0.01	<0.01
		VOC	0.04	<0.01
		NO _x	0.08	<0.01
		SO ₂	<0.01	<0.01
		CO	0.99	0.05
027	Emergency Generator 1	PM	0.44	0.02
		PM ₁₀	0.44	0.02
		PM _{2.5}	0.44	0.02
		VOC	2.09	0.10
		NO _x	38.55	1.93
		SO ₂	0.07	<0.01
		CO	38.55	1.93
028	Emergency Generator 2	PM	0.44	0.02
		PM ₁₀	0.44	0.02
		PM _{2.5}	0.44	0.02
		VOC	2.09	0.10
		NO _x	38.55	1.93
		SO ₂	0.07	<0.01
		CO	38.55	1.93
029	Diesel Tank	VOC	0.64	<0.01
030	Fugitive Chemical Building	VOC	0.02	0.08
		HF	<0.01	<0.01
		HNO ₃	<0.01	0.02
		Lactic Acid	<0.01	0.02
		Hydrogen Peroxide	<0.01	0.01
		Diethylene glycol butyl ether	0.01	0.04
		Ethylene glycol butyl ether	0.01	0.04

Emission Sources - Maximum Allowable Emission Rates

031	Fugitive Bridge	Argon	21.88	95.82
-----	-----------------	-------	-------	-------

- (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) VOC - volatile organic compounds as defined in Title 30 Texas Administrative Code § 101.1
- NO_x - total oxides of nitrogen
- CO - carbon monoxide
- SO₂ - sulfur dioxide
- PM - total particulate matter, suspended in the atmosphere, including PM₁₀ and PM_{2.5}, as represented.
- PM₁₀ - total particulate matter equal to or less than 10 microns in diameter, including PM_{2.5}, as represented.
- PM_{2.5} - particulate matter equal to or less than 2.5 microns in diameter
- HF - hydrogen fluoride
- HNO₃ - nitric acid
- H₂ - hydrogen gas
- (4) Compliance with annual emission limits (tons per year) is based on a 12-month rolling period.
- (5) Emission rate is an estimate and is enforceable through compliance with the applicable special condition(s) and permit application representations.

Date: _____ DATE