

Emission Sources - Maximum Allowable Emission Rates
Permit Numbers 107530 and PSDTX1338

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)
CR-1	Ethane Cracking Furnace No. 1	NO _x	4.13	12.42
		CO	11.00	48.80
		VOC	1.48	6.49
		PM	0.88	3.85
		PM ₁₀	0.88	3.85
		PM _{2.5}	0.88	3.85
		SO ₂	0.19	2.64
		NH ₃	1.21	5.30
CR-1-MSS	Ethane Cracking Furnace No. 1 - MSS	NO _x	26.00	(6)
		CO	43.00	(6)
		VOC	0.19	(6)
		PM	0.29	(6)
		PM ₁₀	0.29	(6)
		PM _{2.5}	0.29	(6)
		SO ₂	10.42	(6)
		NH ₃	1.21	(6)

CR-2	Ethane Cracking Furnace No. 2	NO _x	4.13	12.42
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		CO	11.00	48.80
		VOC	1.48	6.49
		PM	0.88	3.85
		PM ₁₀	0.88	3.85
		PM _{2.5}	0.88	3.85
		SO ₂	0.19	2.64
		NH ₃	1.21	5.30
CR-2-MSS	Ethane Cracking Furnace No. 2 - MSS	NO _x	26.00	(6)
		CO	43.00	(6)
		VOC	0.19	(6)
		PM	0.29	(6)
		PM ₁₀	0.29	(6)
		PM _{2.5}	0.29	(6)
		SO ₂	10.42	(6)
		NH ₃	1.21	(6)
CR-3	Ethane Cracking Furnace No. 3	NO _x	4.13	12.42
		CO	11.00	48.80
		VOC	1.48	6.49
		PM	0.88	3.85
		PM ₁₀	0.88	3.85
		PM _{2.5}	0.88	3.85
		SO ₂	0.19	2.64
		NH ₃	1.21	5.30
CR-3-MSS	Ethane Cracking Furnace No. 3 - MSS	NO _x	26.00	(6)
		CO	43.00	(6)
		VOC	0.19	(6)

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		PM	0.29	(6)
		PM ₁₀	0.29	(6)
		PM _{2.5}	0.29	(6)
		SO ₂	10.42	(6)
		NH ₃	1.21	(6)
CR-4	Ethane Cracking Furnace No. 4	NO _x	4.13	12.42
		CO	11.00	48.80
		VOC	1.48	6.49
		PM	0.88	3.85
		PM ₁₀	0.88	3.85
		PM _{2.5}	0.88	3.85
		SO ₂	0.19	2.64
		NH ₃	1.21	5.30
CR-4-MSS	Ethane Cracking Furnace No. 4 - MSS	NO _x	26.00	(6)
		CO	43.00	(6)
		VOC	0.19	(6)
		PM	0.29	(6)
		PM ₁₀	0.29	(6)
		PM _{2.5}	0.29	(6)
		SO ₂	10.42	(6)
		NH ₃	1.21	(6)
CR-5	Ethane Cracking Furnace No. 5	NO _x	4.13	12.42
		CO	11.00	48.80
		VOC	1.48	6.49
		PM	0.88	3.85
		PM ₁₀	0.88	3.85

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		PM _{2.5}	0.88	3.85
		SO ₂	0.19	2.64
		NH ₃	1.21	5.30
CR-5-MSS	Ethane Cracking Furnace No. 5 - MSS	NO _x	26.00	(6)
		CO	43.00	(6)
		VOC	0.19	(6)
		PM	0.29	(6)
		PM ₁₀	0.29	(6)
		PM _{2.5}	0.29	(6)
		SO ₂	10.42	(6)
		NH ₃	1.21	(6)
CR-1, CR-2, CR-3, CR-4, CR-5	Hourly NO _x Cap for Ethane Cracking Furnaces Nos. 1 to 5	NO _x	15.13	(7)

CR-6	CR Thermal Oxidizer No. 1	NO _x	5.10	22.34
		CO	3.40	14.89
		VOC	2.98	13.03
		SO ₂	0.09	0.37
		H ₂ SO ₄	0.01	0.04
		PM	0.85	3.72
		PM ₁₀	0.85	3.72
		PM _{2.5}	0.85	3.72

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CR-7	CR Thermal Oxidizer No. 2	NO _x	5.10	22.34
		CO	3.40	14.89
		VOC	2.98	13.03
		SO ₂	0.09	0.37
		H ₂ SO ₄	0.01	0.04
		PM	0.85	3.72
		PM ₁₀	0.85	3.72
		PM _{2.5}	0.85	3.72
CR-8	CR High Pressure Flare	NO _x	0.21	0.92
		CO	0.42	1.85
		SO ₂	<0.01	<0.01
CR-8-MSSa	CR High Pressure Flare – Startup Activities	NO _x	510.60	73.53
		CO	1019.35	146.79
		VOC	939.00	135.22
		SO ₂	30.12	4.34

CR-8-MSSb	CR High Pressure Flare – Shutdown Activities	NO _x	427.80	3.42
		CO	854.05	6.83
		VOC	1113.00	8.90
CR-9	CR Emergency Generator Diesel Engine	NO _x	24.45	0.64
		CO	2.14	0.06
		VOC	0.54	0.01
		SO ₂	0.02	0.01
		PM	0.14	0.01
		PM ₁₀	0.14	0.01
		PM _{2.5}	0.14	0.01

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CR-11	CR Cooling Tower	VOC	42.03	18.41
		PM _{2.5}	0.006	0.03
		PM ₁₀	0.56	2.45
		PM	2.94	12.89
		Cl ₂	0.01	0.01
CR-12-MSS	C3/C4 Hydrogenation Regeneration Vent – MSS Activities	CO	76.09	3.80
		VOC	2.00	0.10
CR-13	CR Furnace Area Fugitives (5)	VOC	0.34	1.51
		NH ₃	0.03	0.14
CR-14	CR Charge Gas Area Fugitives (5)	VOC	0.82	3.61
CR-15	CR Recovery Area Fugitives (5)	VOC	1.35	5.91
CR-16	CR 3+ Area Fugitives (5)	VOC	0.22	0.95
CR-17	CR Waste Treatment Area Fugitives (5)	VOC	0.18	0.77
CR-18	CR LPG and Gasoline Storage and Loading Area Fugitives (5)	VOC	0.26	1.12
CR-19	Hydrogen Vent	CO	0.04	0.03

- (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
 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
 CO - carbon monoxide
 NH₃ - ammonia
 H₂SO₄ - sulfuric acid
 Cl₂ - chlorine
- (4) Compliance with annual emission limits (tons per year) is based on a 12 month rolling period.
- (5) Emission rates are estimates and are enforceable through compliance with the applicable special condition(s) and permit application representations.
- (6) Annual MSS emissions for Ethane Cracking Furnaces Nos. 1 to 5 (EPNs CR-1 to CR-5) are contained within the respective annual allowables for each furnace.

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- (7) Annual routine NO_x emissions for Ethane Cracking Furnaces Nos. 1 to 5 (EPNs CR-1 to CR-5) are contained within the respective annual allowables for each furnace.

Date: September 30, 2016