

EMISSION SOURCES - MAXIMUM ALLOWABLE EMISSION RATES

AIR CONTAMINANTS DATA

Emission Point No. (1)	Source Name (2)	Air Contaminant Name (3)	<u>Emission Rates</u> lb/hr TPY	
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Permit No. 1733A

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. Any proposed increase in emission rates may require an application for a modification of the facilities covered by this permit.

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Emission Point No. (1)	Source Name (2)	Air Contaminant Name (3)	<u>Emission Rates</u> lb/hr TPY	
7-2-2	Fugitives (4)	VOC	1.68	7.37
		NH ₃	0.51	2.22
7-2-3	Truck Loading	VOC	0.34	0.08
7-2-4	Rail Loading	VOC	2.60	0.06
7-2-5	T-12 Overhead Drum	VOC	0.045	0.18
7-2-6	Dehydro Methane Burner	CO	0.09	0.36
		NO _x	0.47	1.78
		PM ₁₀	0.02	0.09
		VOC	0.02	0.09
7-2-7	Dehydro Methane Burner	CO	0.09	0.36
		NO _x	0.47	1.78
		PM ₁₀	0.02	0.09
		VOC	0.02	0.09
7-2-8	Dilute Acid Water Tank	Organic Acids	0.038	0.15

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			lb/hr	TPY
7-2-9	Anolon Storage Tank	VOC	0.30	1.40
7-2-10	T-15 Overhead Condenser	VOC	1.62	7.10
7-2-11	Tech Anol Feed Tank	VOC	0.15	0.16
7-2-12	Tech Anol Feed Tank	VOC	0.02	0.16
7-2-13	D'Anone Storage Tank	VOC	0.19	0.81
7-2-14	Dehydro Feed Tank	VOC	0.05	0.10
7-2-15	Cyclohexanol Tank	VOC	0.05	0.05
7-2-16	Cyclohexanol Tank	VOC	0.04	0.43
7-2-17	Cyclohexanone Storage Tanks	VOC	4.75	0.36
7-2-18	Cyclohexanone Storage Tank	VOC	2.37	0.18
7-2-19	Cyclohexanone Storage Tank	VOC	2.37	0.18
7-2-21	Concentrated Catalyst Tank	VOC	2.51	0.02
7-2-22	Cyclohexanone Storage Tank	VOC	2.37	0.18
7-2-23	Cyclohexanone Storage Tank	VOC	2.38	0.18
7-2-24	Anolon Storage Tank	VOC	0.051	0.20
7-2-25	Dehydro Feed Tank	VOC	1.37	0.07
7-2-27	Dilute Catalyst Tank	VOC	0.71	0.04
7-2-30	Anone and Anolon Storage	VOC	1.18	0.35

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Emission Point No. (1)	Source Name (2)	Air Contaminant Name (3)	<u>Emission Rates</u>	
			lb/hr	TPY
	Tank			
7-2-32	Dilute Caustic Tank	VOC	0.001	<0.001
9-1-24	Cyclohexane Tank	VOC	0.26	0.32
9-1-25	Cyclohexane Tank	VOC	0.23	0.38
9-1-26	Cyclohexane Tank	VOC	0.12	0.38
9-1-27	Concentrated Acid Water Tank	Organic Acids	<0.003	0.03
9-1-28	Emergency Dump Tank	VOC	60.87	4.66
11-1-2	Catalytic Incinerator	CO	50.72	222.14
		NO _x	0.97	0.94
		TSP	0.05	0.05
		VOC	20.91	91.63

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			lb/hr	TPY
11-1-3	Dehydro Methane Burner	CO	0.09	0.36
		NO _x	0.47	1.78
		TSP	0.02	0.09
		VOC	0.02	0.09
11-1-4	Dehydro Methane Burner	CO	0.09	0.36
		NO _x	0.47	1.78
		TSP	0.02	0.09
		VOC	0.02	0.09
11-1-5	Dehydro Methane Burner	CO	0.09	0.36
		NO _x	0.47	1.78
		TSP	0.02	0.09
		VOC	0.02	0.09
11-1-6	Dehydro Methane Burner	CO	0.10	0.36
		NO _x	0.51	1.78
		TSP	0.03	0.09
		VOC	0.03	0.09
11-1-7	Waste Burner	CO	0.98	4.03
		NO _x	18.83	77.73
		TSP	7.6	31.36
		VOC	30.62	123.3
11-1-9	Vent Condenser	VOC	0.02	1.3
11-1-10	Anolon Tank	VOC	0.08	0.08
11-1-12	Overhead Condenser	VOC	2.43	10.66
11-1-13	Overhead Condenser	VOC	4.45	19.49
11-1-14	Overhead Condenser	VOC	<0.01	<0.01
11-1-15	Storage Tank	VOC	<0.01	0.04

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Emission Point No. (1)	Source Name (2)	Air Contaminant Name (3)	<u>Emission Rates</u>	
			lb/hr	TPY
11-1-21	EP 316/323 Tank	VOC	0.02	<0.05
11-1-22	EP 323 Storage Tank	VOC	< 0.01	0.024
11-1-23	Concentrated Acid Water	Organic Acids	<0.01	<0.01
11-1-24	Dilute Acid Water Tank	Organic Acids	<0.01	<0.01
11-1-25	Concentrated Catalyst Tank	VOC	1.93	0.02
11-1-26	Dilute Catalyst Tank	VOC	0.04	0.11
11-1-27	Hotwell Tank	VOC	<0.001	< 0.01
11-1-29	Anolon Tank	VOC	0.02	1.3
11-1-35	Cyclohexanone Tanks (3)	VOC	1.28	6.11
11-1-36	Dehydro Feed Tank	VOC	0.14	0.19
11-1-37	Dehydro Feed Tank	VOC	0.14	0.19
11-1-38	Dehydro Feed Tank	VOC	0.14	0.19
11-1-39	Dehydro Feed Tank	VOC	0.14	0.19
11-1-40	Heavies Cracking Feed	VOC	0.11	0.52
11-1-41	EP-316 Storage Tank	VOC	0.25	0.075
11-1-42	EP-316 Storage Tank	VOC	0.44	0.17
11-1-43	Dehydro Methane Burner	CO	0.09	0.36
		NO _x	0.47	1.78
		TSP	0.02	0.09

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Emission Point No. (1)	Source Name (2)	Air Contaminant Name (3)	<u>Emission Rates</u>	
			lb/hr	TPY
		VOC	0.03	0.09
11-1-44	Dehydro Methane Burner	CO	0.10	0.36
		NO _x	0.51	1.78
		TSP	0.03	0.09
		VOC	0.03	0.09
11-1-45	Emergency Dump Tank	VOC	62.35	0.86
11-1-47	Fugitives (4)	VOC	2.79	12.21
11-1-48	Fugitives (4)	VOC	2.17	9.52
11-1-49	Fugitives (4)	NH ₃	0.63	2.78
11-1-50	Railcar Loading	VOC	7.87	0.72
11-1-51	Truck Loading	VOC	1.11	0.087
11-1-52	Off-site Barge Loading	VOC	3.83	0.181
7-3-1	Nitric Oxide Flare	NO _x	2.15	0.47
		CO	1.0	0.13
7-3-2	Vent Gas Flare	NO _x	71.4	312.76
		CO	7.01	30.7
7-3-34	Kettle Scrubber Vent	Acids	0.5	2.19
7-3-35	Catalytic Converter Vent	TSP	<0.001	<0.001
7-3-42	Catalyst Oven Vent	TSP	<0.001	<0.001
7-3-43	Catalyst Oven Vent	TSP	<0.001	<0.001

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Emission Point No. (1)	Source Name (2)	Air Contaminant Name (3)	<u>Emission Rates</u>	
			lb/hr	TPY
7-3-44	Catalyst Oven Vent		TSP	<0.001
				<0.001
7-3-52	Transfer Station		TSP	1.17
				5.04
7-3-55	Fugitives (4)		NH ₃	0.98
				4.3
12-1-1	Vent Gas Flare		NO _x	210.98
			CO	707.64
				10.92
				36.80
12-1-2	Nitric Oxide Flare		NO _x	1.0
			CO	0.07
				1.0
				0.13
12-1-8	Concentrated Sulfuric Acid Storage Drum		H ₂ SO ₄	<0.001
				<0.001
12-1-9	Concentrated Sulfuric Acid Storage Drum		H ₂ SO ₄	<0.001
				<0.001
12-1-29	Catalytic Converter Vent		TSP	<0.001
				0.003
12-1-30	Kettle Scrubber Vent		Acids	0.50
				2.19
12-1-31	Catalyst Oven Vent		TSP	<0.001
				<0.001
12-1-32	Catalyst Oven Vent		TSP	<0.001
				<0.001
12-1-33	Catalyst Oven Vent		TSP	<0.001
				<0.001
12-1-34	Catalyst Oven Vent		TSP	<0.001
				<0.001
12-1-35	Catalyst Oven Vent		TSP	<0.001
				<0.001
12-1-36	Catalyst Oven Vent		TSP	<0.001
				<0.001
12-1-44	Catalyst Transfer Station		TSP	4.01
				17.23

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Emission Point No. (1)	Source Name (2)	Air Contaminant Name (3)	<u>Emission Rates</u>	
			lb/hr	TPY
12-1-45	Fugitives (4)		NH ₃	1.61 7.1
7-1-7	Anone Stripper OH Drum		VOC	0.53 0.003
7-1-8	Benzene Scrubber Vent		VOC (Benzene)	0.75 3.29
7-1-9	Slurry Settling Drum		VOC	0.28 <0.001
7-1-10	Wash Water Storage Tank		VOC	<0.001 <0.001
7-1-11	Wash Water Storage Tank	<	VOC	0.001 <0.001
7-1-12	Wash Water Storage Tank		VOC	<0.001 <0.001
7-1-13	Wash Water Storage Tank		VOC	<0.001 <0.001
7-1-14	SO ₂ Scrubber		SO ₂	2.72 11.92
7-1-15	Neutralization Separator Drum		VOC	0.45 <0.001
7-1-16	Neutralization Circulation Drum		VOC	0.14 <0.001
7-1-17	Neutralization Crude Storage Tank		VOC	0.01 0.004
7-1-20	Kettle Dump Drum		VOC	0.02 <0.001
7-1-21	Overhead Drum		VOC	0.01 <0.001
7-1-22	Bottoms Drum		VOC	0.10 <0.01
7-1-23	Check Tank		VOC	0.20 0.01
7-1-24	Check Tank		VOC	0.20 0.01

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Emission Point No. (1)	Source Name (2)	Air Contaminant Name (3)	<u>Emission Rates</u>	
			lb/hr	TPY
7-1-25	Storage Tank Vent	VOC	7.46	0.006
7-1-26	Kettles Overhead Tank	VOC	0.005 <	0.001
7-1-27	Bottoms Drum	VOC	0.05	0.004
7-1-29	Anone Surge Tank	VOC	1.20	0.01
7-1-30	Oleum Scrubber Vent	SO ₃ /H ₂ SO ₄	<0.001	0.003
7-1-31	Oxime Holdup Tank	VOC	1.02	0.013
7-1-32	Neutralization Separator Drum	VOC	0.45	<0.001
7-1-33	Neutralization Circulation Drum	VOC	0.20	<0.001
7-1-34	Neutralization Crude Storage Tank	VOC	0.01	0.05
7-1-35	Extract Storage Tank	VOC	0.013	0.009
7-1-36	Overheads Drum	VOC	0.08 <	0.01
7-1-37	Bottoms Tank	VOC	0.12	<0.01
7-1-38	Product Check Tank	VOC	0.17	0.01
7-1-39	Product Check Tank	VOC	0.17	0.01
7-1-40	Overheads Drum	VOC	0.007	0.001
7-1-41	Poly Return Storage Tank	VOC	0.006	0.002

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Emission Point No. (1)	Source Name (2)	Air Contaminant Name (3)	Emission Rates			
			lb/hr	TPY		
7-1-42	Oxime Salt Storage Tank			VOC	0.004	<0.001
7-1-43	Mother Liquor Storage Tank			VOC	0.016	<0.001
7-1-44	Flake Feed Storage Tank			VOC	0.19	0.12
7-1-46	SO4 Scrubber			TSP	4.86	21.29
7-1-47	Jet Vent			VOC	0.01	0.046
7-1-48	Jet Vent			VOC	0.01	0.046
7-1-49	Flaker N2 Scrubber			TSP	0.64	2.79
7-1-58	Jet Vent			VOC	0.01	0.046
7-1-59	Jet Vent			VOC	0.01	0.046
7-1-60	Jet Vent			VOC	0.01	0.046
7-1-61	Jet Vent			VOC	0.01	0.046
7-1-62	Jet Vent			VOC	0.01	0.046
7-1-63	Jet Vent			VOC	0.01	0.046
7-1-64	N2 Drying Tower			VOC	0.056	0.24
7-1-65	Vacuum System			VOC	0.01	0.046
7-1-66	Tank Farm Fugitives (4)			VOC	0.30	1.31
7-1-67	Oximation Fugitives (4)			VOC	0.30	1.3
				NH ₃	0.48	2.1
7-1-68	Distillation Fugitives (4)			VOC	0.3	1.32
7-1-69	Reaction Fugitives (4)			VOC	0.3	1.32

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Emission Point No. (1)	Source Name (2)	Air Contaminant Name (3)	<u>Emission Rates</u>	
			lb/hr	TPY
7-1-70	Extraction Fugitives (4)	VOC	0.3	1.32
7-1-71	Caprolactam Rail Loading	VOC	0.01	<0.001
7-1-73	SO ₂ Scrubber	SO ₂	2.76	12.07
		NH ₃	0.29	1.27
14-1-4	Oxime Separator	VOC	<0.001	<0.01
14-1-5	Oxime Separator	VOC	<0.001	0.01
14-1-7	Overheads	VOC	0.22	0.95
14-1-8	Lactam Separator	VOC	<0.001	<0.001
14-1-10	Purge Drums	VOC	1.90	6.30
14-1-12	Centrifuge Feed Tank	VOC	0.000	<0.001
14-1-13	Centrifuge Feed Tank	VOC	0.027	<0.001
14-1-16	D-711	VOC	0.027	0.002
14-1-18	HW-140	VOC	0.057	0.25
14-1-25	Oxime Storage Drum .012	VOC	1.48	0
14-1-27	Crude Lactam Storage	VOC	0.029	0.008
14-1-29	Extract Storage	VOC	0.007	0.01
14-1-30	Extract Storage	VOC	0.007	0.001
14-1-31	Extract Storage	VOC	0.66	1.44
14-1-32	D-301	VOC	0.037	< 0.01

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Emission Point No. (1)	Source Name (2)	Air Contaminant Name (3)	<u>Emission Rates</u>	
			lb/hr	TPY
14-1-36	Foreruns Receiver	VOC	0.76	0.026
14-1-37	Lights Throwaway Storage	VOC	0.10	0.008
14-1-38	Kettle Feed Drum	VOC	0.25	0.029
14-1-39	Kettle Overheads	VOC	0.61	0.02
14-1-40	Mother Liquor Storage	VOC	0.25	0.002
14-1-41	Mother Liquor Receiver	VOC	0.01	<0.001
14-1-44	Water Storage	VOC	<0.001	0.0000
14-1-45	Concentrated Storage	VOC	4.69	0.10
14-1-46	Oxime Salt Storage	VOC	1.21	0.002
14-1-47	Mother Liquor Storage	VOC	0.62	0.004
14-1-54	EV-140	VOC	0.01	0.046
14-1-55	Drying Tower	VOC	0.01	0.046
14-1-56	Foreruns Tower Receiver	VOC	0.01	0.046
14-1-57	Finishing Tower	VOC	0.01	0.046
14-1-58	E-511	VOC	0.01	0.046
14-1-60	D-431	VOC	0.02	0.092
14-1-61	Kettle	VOC	0.01	0.046
14-1-62	E-600a	VOC	0.01	0.046
14-1-63	E-600b	VOC	0.01	0.046

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			lb/hr	TPY
14-1-64	E-720	VOC	0.01	0.046
14-1-65	T-130	VOC	<0.001	0.003
14-1-67	Pre-Drying Tower	VOC	0.01	0.046
14-1-68	Caprolactam Loading	VOC	0.45	1.03
14-1-69	Scrubber	TSP	1.17	5.12
14-1-70	Vacuum Jet	VOC	0.01	0.046
14-1-73-01	Oximation Fugitives (4)	VOC	0.20	0.87
14-1-73-02	Anone Recovery Fugitives (4)	VOC	0.20	0.87
14-1-73-03	Caprolactam Fugitives (4)	VOC (Benzene)	0.20	0.87
14-1-73-04	Benzene Fugitives (4)	VOC (Benzene)	0.20	0.87
14-1-73-05	Fugitives (4)	NH ₃	0.136	0.60
14-1-75	Benzene Crude Scrubber	VOC (Benzene)	0.75	3.29
14-1-76	SO ₂ Scrubber	SO ₂	2.76	12.07
		NH ₃	0.29	1.27
14-1-77	Oleum Scrubber	SO ₃ /H ₂ SO ₄	<0.001	0.003
14-1-78	t1160, t1150	VOC	0.08	0.32
14-1-82	Benzene Truck Loading	VOC (Benzene)	1.07	0.003
14-1-83	Caprolactam Loading	VOC	0.002	<0.001
14-1-85	Extract Storage	VOC	0.21	0.05

14-1-86	Kettle Dump Trailer	VOC	0.067	0.294
14-1-87	e331a	VOC	0.01	0.046
14-1-88	e341b	VOC	0.01	0.046
14-1-90	Extraction Tower Bottoms	VOC	<0.001	< 0.01

- (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)
 - PM₁₀ - particulate matter less than 10 microns
 - VOC - volatile organic compounds as defined in General Rule 101.1
 - NO_x - total oxides of nitrogen
 - SO₂ - sulfur dioxide
 - CO - carbon monoxide
 - H₂SO₄ - sulfuric acid
 - SO₃ - sulfur trioxide
 - TSP - total suspended particulates
 - NH₃ - ammonia
- (4) Fugitive emissions are an estimate only and should not be considered as a maximum allowable emission rate.

Dated _____