

Statement of Basis For Title V Permit

Company Name	Millennium Inorganic Chemicals, Inc. - Plant 2 (formerly known as SCM Chemicals, Inc. - Plant 2)		Page 1
Premise Number	02-041-01-0193		
Number of Non-insignificant Emissions Units	12		
What makes this facility a Title V facility?	PE, SO ₂ , CO, NO _x & HAP (COS).		
Has each insignificant emissions unit been reviewed to confirm it meets the definition in 3745-77-01 (U)?	Yes.		
Part II (State and Federally Enforceable Requirements)			
Term and Condition (paragraph)	Basis		Comments
	SIP (3745-)	Other	
None.			

Instructions for Part II:

Each paragraph in Part II must be identified and the remainder of the table completed. If the SIP (not including 31-05) is the basis for the term and condition, identify the specific rule. If the SIP is not the basis for the term and condition, place an “N” in the column under “SIP.” If the basis for the term and condition is something other than the SIP, including 3745-31-05, NSPS or MACT, a “Y” should be noted in the “Other” column, and if not, an “N” should be noted. Whether the basis for the term and condition is the “SIP” or “Other,” an explanation of each term and condition in Part II must be provided in the “Comments” section. If there were any “common control” issues associated with this facility, after the table for Part II, provide a summary of those issues and explain how the DAPC decided to resolve them.

Instructions for Part III:

All non-insignificant EUs must be included in this table. For each EU, or group of similar EUs, each emission limitation and control requirement specified in section A.I.1 and A.I.2 of the permit must be identified and the remainder of the table completed. If the SIP (not including 31-05) is the basis for the term and condition, identify the specific rule. If the SIP is not the basis for the term and condition, place an “N” in the column under “SIP.” If the basis for the term and condition is something other than the SIP, including 3745-31-05, NSPS or MACT, a “Y” should be noted in the “Other” column, and if not, an “N” should be noted. If the basis for the term and condition is “Other,” an explanation of the basis must be provided in the “Comments” section.

To complete the remainder of the table after “Basis,” except for the “Comments” section, simply specify a “Y” for yes or an “N” for no. For the “M”, “R”, “Rp” and “ET” columns, if “N” is specified, there should be a brief explanation in the “Comments” section as to why there are no comments. Also, if a “Y” is noted under “OR” or “Misc,” an explanation of the requirements should be provided in the “Comments” section. In addition to a general explanation of the “OR” and/or “Misc,” the following should be provided:

1. For an operational restriction, clarify if appropriate monitoring, recordkeeping, reporting requirements have been specified for the operational restriction and indicate whether or not CAM is currently applicable.
2. If a control plan and schedule is included in the “Miscellaneous Requirements” section of the permit, provide an explanation in the “Comments” section of the violation, basis for the violation, and the company’s proposed control plan and schedule.
3. If superseding language is included in the “Miscellaneous Requirements” section of the permit, explain which requirements are being superseded and which requirements are being superseded on the State-only side of the permit and why they are on the State-only side. An explanation is not required if an “N” is noted in the “OR” column or in the “Misc” column. Any unusual requirements or aspects of the terms and conditions in Part III that are not self-explanatory should be explained in a paragraph following the table for Part III.

EU = emissions unit id
OR = operational restriction

R = recordkeeping requirements
Rp = reporting requirements

Misc = miscellaneous requirements

M = monitoring requirements

ET = emission testing requirements (not including compliance method terms)

Part III (Requirements Within the State & Federally Enforceable Section)											
EU(s)	Limitation	Basis		O R	M	R	Rp	E T	Misc	Comments	Page
		SIP (3745-)	Other								
B013-B017	20% opacity	17-07(A)		Y	N	Y	Y	Y	N	Natural gas-fired units are inherently clean & must employ natural gas fuel. R & Rp if fuel other than natural gas is employed.	2
B013-B016	0.020 lb PE/mmBtu	17-10(B)		N	N	N	N	N	N	0.020 lb PE/mmBtu from duct heater is less stringent than lb PE/hr limit per BAT limit required by OAC rule 3745-31-05(A)(3). Since duct burner can not be operated independently of the combustion turbine, the weighted average PE from this combined cycle emissions unit, when operating at 100% load (with total combined cycle heat input of 120.1 mmBtu/hr actual heat input measured at 0 ^o F) shall not exceed 0.0308 lb/mmBtu of actual heat input; this is equivalent to an emissions rate of 3.70 lbs/hr at 0 ^o F.	
B013-B017	0.040lb PE/mmBtu	17-11(B)4		N	N	N	N	N	N	0.040 lb PE/mmBtu from combustion turbine is less stringent than lb PE/hr limit per BAT limit required by OAC rule 3745-31-05(A)(3). See comments for OAC rule 3745-17-10(B).	
B013-B017	0.5 lbSO _x /mmBtu	18-06(E)		N	N	N	N	Y	N	BAT limit is more stringent. Stack test results will be reported in lb/mmBtu as well as lb/hr.	
B013-B016	3.70 lbs PE/hr, 14.58 TPY	31-05(A)-(3)		Y	N	Y	Y	Y	N	For lb PE/hr limit, same comments as for OAC rule 3745-17-07(A). Worst case Lb PE/hr limit also estimated via emission factors in AP-42 and maximum heat input values. Ton/Year limit is worst case hourly PE rate multiplied by actual operating hours/year.	
B017	2.60 lbs PE/hr, 9.76 TPY										
B013-B016	2.12 lbs OC/hr, 8.94 TPY	31-05(A)-(3)		N	N	N	N	Y	N	Worst case Lb OC/hr limit also estimated via emission factors in AP-42 and maximum heat input values. Ton/Year limit is worst case hourly OC rate multiplied by actual operating hours/year.	
B017	0.46 lb PE/hr, 1.71 TPY										
B013-B016	0.86 lbSO ₂ /hr, 3.46TPY	31-05(A)-(3)		N	N	N	N	Y	N	Lb SO ₂ /hr rate determined at maximum capacity of combustion turbine and maximum capacity of duct heater via test Methods 1-4 & 6C . Ton/Year limit is actual hourly rate multiplied by actual operating hours/year.	
B017	0.46 lb SO ₂ /hr, 1.71 TPY										
B013-B016	12.70 lb CO /hr, 43.58 TPY	31-05(A)-(3)		N	N	N	N	Y	N	Lb CO/hr rate determined at maximum capacity of combustion turbine and (for B013-B016) when maximum capacity of duct heater via test Methods 1-4 & 10 . Also CO test conducted when turbine is at or near 30% capacity and (for B013-B016) when duct heater is at normal capacity. Ton/Year limit is actual hourly rate multiplied by actual operating hours/year.	
B017	8.57 lb CO/hr, 25.49 TPY										

EU(s)	Limitation	SIP (3745-)	Other	O R	M	R	Rp	T	M	Comments	Page
B013-B016	12.40 lbNO _x /hr, 50.37 TPY	31-05(A)-(3)		N	N	N	N	Y	N	NO _x tests conducted when turbine is at or near 30%, 50%, 75% & 100% capacity, and (for B013-B016) the duct heater is at normal capacity. For B013-B016 when both turbine and duct heater are at or near 100% capacity. Ton/Year limit is actual hourly rate multiplied by actual operating hours/year.	3
B017	6.90 lbNO _x /hr, 26.28 TPY										
B013-B017	187.2 TPY NO _x & 163.4 TPY CO from 5 units	31-05(D)		Y	Y	Y	Y	Y	N	Synthetic minor PTI 01-13197 to avoid PSD rule. These annual NO _x and CO emissions limitations shall be achieved by restricting the maximum quantity of natural gas burned for these emissions units to a cumulative total volume of 3590 million cubic feet on a rolling 12-month summation basis. OR, M, R, Rp for natural gas usage from combination of B013-B017.	
B013-B016	na		40 CFR sub-part Dc	Y	N	Y	Y	N	N	The duct burner portion is exempted from the SO ₂ standard limits and from the PE standard limits, referenced in 40 CFR Part 60.42c and in 40 CFR Part 60.43c, respectively, as long as this steam generation unit burns only natural gas as a fuel. OR to employ only natural gas fuel. R & Rp if other fuels are employed.	
B013-B017	190 ppmv NO _x & 15% SO ₂ (vol.) @ 15% O ₂ on dry basis from combustion turbine		40 CFR sub-part GG	N	N	N	N	Y	N	Combustion turbine and duct burner emissions are combined and exhausted out the same stack. Hourly NO _x & SO ₂ limits from combined cycle units, per OAC rule 3745-31-05(A)(3) are more stringent than federal limit. NO _x & SO ₂ test results should be reported at 15% O ₂ on a dry basis at ppmv & % vol., respectively.	
B013-B017	0.8%, by weight, sulfur content of natural gas burned		40 CFR sub-part GG	N	Y	Y	Y	Y	N	M & R of natural gas fuel samples analysis for sulfur content done 2x/month for months 1-6. Then quarterly M & R if sulfur content shows little variability. Annual deviation reports if sulfur content exceeds 0.8%, by weight.	
F001 & F002	≤ 6 min. VE/60 min. observation period- paved	-17-07(B)(4)		Y	Y	Y	Y	Y	N	OR- use of used oil as dust suppressant is prohibited per OAC rule 3745-279-82; use of hazardous waste materials as dust suppressant is prohibited. Use of reasonable available control measures (RACM) includes watering, removal of dusty materials, covering of dust materials in open-bodied vehicles. M & R daily inspections of roadways & parking areas. Rp-if inspection not done or if control measure not employed when needed.	
	employ RACM- paved	17-08(B), (B)(8) & (B)(9)									
F001 & F002	≤ 13 min. VE/60 min. observation period- unpaved	-17-07(B)(5)		Y	Y	Y	Y	Y	N	OR- use of used oil as dust suppressant is prohibited per OAC rule 3745-279-82; use of hazardous waste materials as dust suppressant is prohibited. RACM)includes watering, removal of dusty materials, covering of dust materials in open-bodied vehicles. M & R daily inspections of roadways & parking areas. Rp-if inspection not done or if control measure not employed when needed.	
	employ RACM- unpaved	17-08(B), (B)(2)									

EU(s)	Limitation	SIP (3745-)	Other	O R	M	R	Rp	T	Mis c	Comments 4	Page
P001	≤20% opacity VE	17-07(A)		Y	Y	Y	Y	Y	N	Opacity limit is for all egress points. 41.2 lbs PE/hr limit is for oxidation reactor egress, caustic scrubber. OR- dust control device, a caustic scrubber, within specified pH range. Daily M & R of scrubber parameter. Rp of scrubber parameter exceedance w/in 30 days of occurrence. Ton/Year limit is actual hourly rate multiplied by actual operating hours/year.	
	41.2 lbs PE/hr	17-11									
	181 TPY PE	31-05(A)(3)									
P001	0.020 lb PE/mmBtu from BA-811	17-10(B)(1)		Y	N	Y	Y	Y	N	OR- use of natural gas fuel in TiCl ₄ vaporizer (BA-811) and in O ₂ preheater (BA-814). R/Rp whenever fuel other than natural gas is employed.	
	0.020 lb PE/mmBtu from BA-814										
P001-BA-811 portion	1.31 TPY PE; 0.04 lb CO/mmBtu & 2.63 TPY; 0.230 lb NO _x & 15.11 TPY	31-05(A)(3)		Y	N	Y	Y	Y	N	OR, R & Rp use of natural gas as fuel. The permittee has satisfied the "best available control techniques and operating practices" and latest available control techniques and operating practices" required pursuant to OAC rule 3745-21-08 and 3745-23-06, respectively, by committing to comply with the best available technology requirements established in PTI 02-11771. Ton/Year limit is actual hourly rate multiplied by actual operating hours/year.	
P001-BA-814portion	0.74 PE; 0.0483 lbCO/mmBtu & 1.80 TPY; 0.224 lb NO _x & 8.34 TPY	31-05(A)(3)		Y	N	Y	Y	Y	N	OR, R & Rp use of natural gas as fuel. The permittee has satisfied the "best available control techniques and operating practices" and latest available control techniques and operating practices" required pursuant to OAC rule 3745-21-08 and 3745-23-06, respectively, by committing to comply with the best available technology requirements established in PTI 02-11771. Ton/Year limit is actual hourly rate multiplied by actual operating hours/year.	
P002	≤20% opacity VE	17-07(A)		Y	Y	Y	Y	Y	N	OR-maintain water flow ≥ specified rate, gal/min, of 3 venturi scrubbers: PA-736/production; PA-770/maintenance; and PA-404/startup. M/R of water flow rates for each of three scrubbers. Rp exceedances of OR.. Production/Maintenance emissions eventually routed to one egress point, which was recently tested for the hourly PE, and demonstrated compliance. Startup emissions vented through another egress & was not recently tested, never witnessed by OEPA, and recently installed a scrubber control device. Startup emissions egress has difficult access, so a Method 22 type VE observsaion must be made. If no VE are observed from startup egress, then a no test is required. If VE is observed from startup egress than Method 5 test to determine PE hourly rate must be performed.	
	38.3 lbs PE/hr	17-11									
P002	484 lbs SO ₂ /hr	18-06(D)(2)		N	N	N	N	Y	N	Maximum, uncontrolled emissions comply with hourly limit. Venturi scrubbers assumed not to affect the inlet SO ₂ rate.	

EU(s)	Limitation	SIP (3745-)	Other	O R	M	R	Rp	T	Mis c	Comments	Page
P002	Cl ₂ monitoring	31-05(A)(3)		N	Y	Y	N	N	N	Production operations exhaust shall be monitored for Cl ₂ concentration in ppm. Cl ₂ emissions are not normal may occur during malfunctions.	5
P012 & P013	≤20% opacity VE	17-07(A)		Y	Y	Y	Y	Y	N	OR,M,R & Rp- Use off natural gas in burner, & pressure drop restriction on respective baghouses.	
	38.3 lbs PE/hr	17-11									
	4.0 lbs PE/hr, 17.5 TPY-P012	31-05(A)(3)									
	2.24 lbs PE/hr, 9.81 TPY-P013										
P013	6.78 lbs CO/hr, 29.7 TPY	31-05(A)(3)		Y	Y	Y	Y	Y	N	OR,M,R & Rp- Use off natural gas in burner.	
	4.40 lbs NO _x /hr, 19.3 TPY										
P903-fugitive	≤20% opacity VE	17-07(B)(1)		Y	Y	Y	Y	Y	N	Inherently clean emissions unit with 2 dust control devices with airflow of 600 dscfm each. OR, R & Rp - employ dust control devices during production operations. R/Rp whenever dust control devices not employed during production operations.	
	employ RACM	17-08(B)									
	0.030 grain PE/dscf	17-08(B)(3)									
P903-stack	≤20% opacity VE	17-07(A)(1)		Y	Y	Y	Y	Y	N	Inherently clean emissions unit with 2 dust control devices with airflow of 600 dscfm each. OR, R & Rp - employ dust control devices during production operations. R/Rp whenever dust control devices not employed during production operations.	
	53.1 lbs PE/hr	17-11									