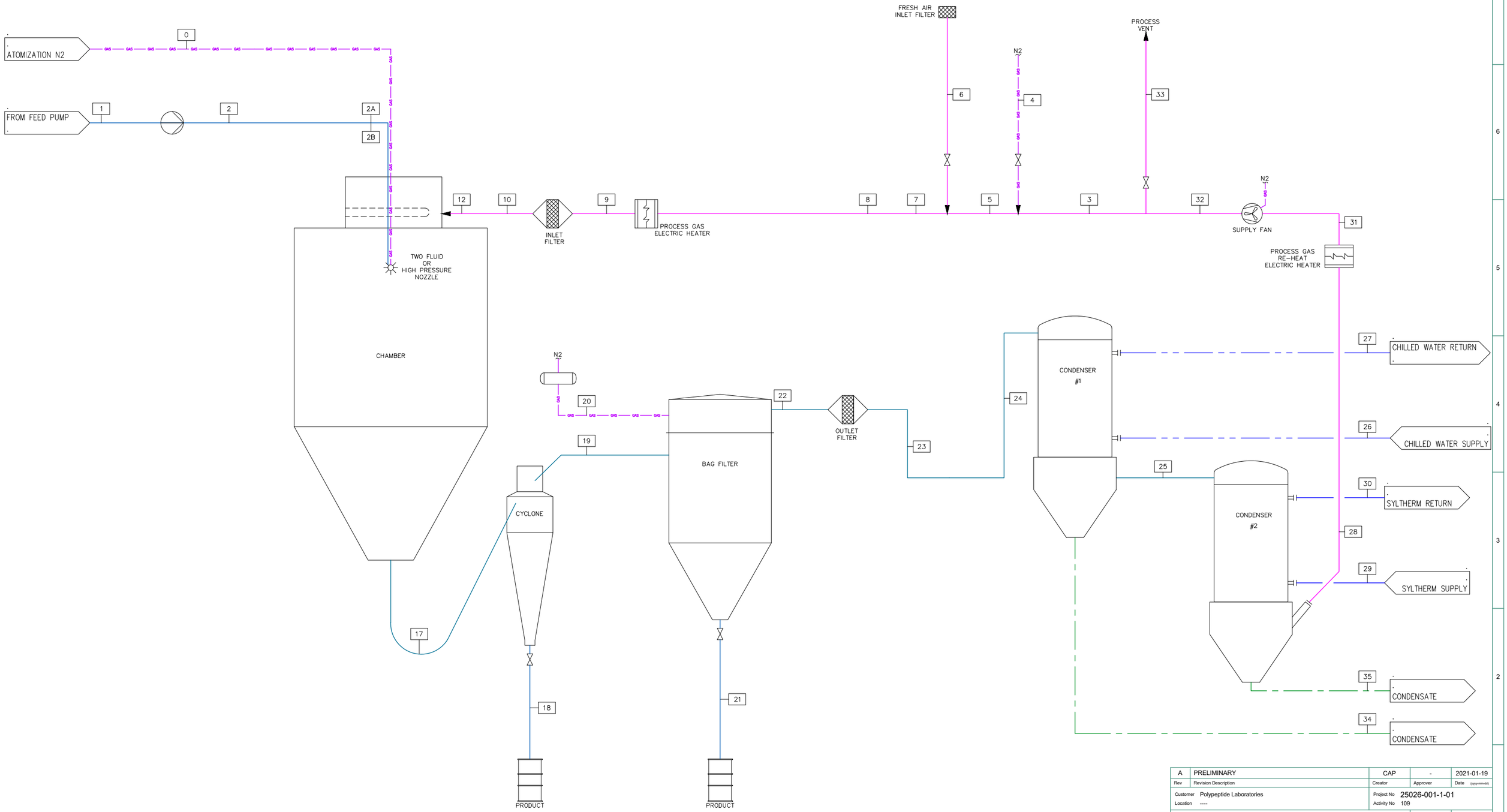

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Polypeptide 25026-001

SOLVENT #1 0 WATER 0

STREAM NUMBER		1	2	2A	2B	3	4	5	6	7	8	9	10	12	17
COMPONENTS:	Unit	ATOMIZ. GAS	FEED	FEED PREESURE NOZZLE	FEED TWO-FLUID NOZZLE	RECYCLE GAS	MAKEUP GAS	GAS AFTER MAKE UP	AIR INLET	GAS AFTER AIR INLET	GAS TO HEATER	GAS AFTER HEATER	INLET AFTER HEPA	DRYER INLET	CHAMBER OUTLET
DRY GAS	kg/hr	10.0				102.0	0.0	102.0	0.0	102.0	102.0	102.0	102.0	102.0	112.0
SOLVENT #1 VAPOR	kg/hr	0.0				0.8	0.0	0.8	0.0	0.8	0.8	0.8	0.8	0.8	4.4
SOLVENT #2 VAPOR	kg/hr	0.0				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
DRY SOLIDS	kg/hr		1.2	0.0	1.2										1.2
SOLVENT #1 LIQUID	kg/hr		3.6	0.0	3.6										0.1
SOLVENT #2 LIQUID	kg/hr	0	0.0	0.0	0.0					0.0					0.0
TOTAL RATE	kg/hr	10.0	4.8	0.0	4.8	102.8	0.0	102.8	0.0	102.8	102.8	102.8	102.8	102.8	117.6
TEMPERATURE	°C	20	20	20	20	29.84	20	28.84	20	28.84	28.84	200	200	200	90
HUMIDITY SOLVENT #1	kg/kg DG	0.0000				0.0079	0.0000	0.0079	0.0000	0.0079	0.0079	0.0079	0.0079	0.0079	0.0389
HUMIDITY SOLVENT #2	kg/kg DG	0.0000				0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
PRESSURE	mm WC	0				920		920	0	920	920	870	745	745	595
PRESSURE	barg	5.0	0.0	50.0	0.5		6.0								
GAS DENSITY	kg/m3	7.15				1.2642	8.3444	1.2684	1.2056	1.2684	1.2684	0.8060	0.7970	0.7970	1.0062
LIQUID/SOLIDS DENSITY	kg/m3	0.00				0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
GAS FLOW	m3/h	1.4				81.3	0.0	81.1	0.0	81.1	81.1	127.6	129.0	129.0	115.6
LIQUID FLOW	l/h		4.8	0.0	4.8										
SOLIDS FLOW	m3/h														
COMMENTS:	-	-	-	-	-	-	-	-	for open cycle/de purging	-	-	-	-	-	-

STREAM NUMBER	-	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35
COMPONENTS:	Unit	CYCLONE POWDER	BF INLET	BAGHOUSE PULSE N2	BF POWDER	BF GAS OUTLET	HEPA OUTLET	CONDEN-SER # 1 GAS IN	CONDEN-SER # 1 GAS OUT	COOLANT # 1 IN	COOLANT # 1 OUT	CONDEN-SER # 2 GAS OUT	COOLANT # 2 IN	COOLANT # 2 OUT	SUPPLY FAN INLET	SUPPLY FAN OUTLET	PROCESS VENT	CONDEN-SATE # 1	CONDEN-SATE # 2
DRY GAS	kg/hr		112.0	12.0		124.0	124.0	124.0	124.0			124.0			124.0	124.0	22.0		
SOLVENT #1 VAPOR	kg/hr		4.4	0.0		4.4	4.4	4.4	1.0			1.0			1.0	1.0	0.2		
SOLVENT #2 VAPOR	kg/hr		0.0	0.0		0.0	0.0	0.0	0.0			0			0.0	0.0	0.0		
DRY SOLIDS	kg/hr	1.152	0.05		0.05														
SOLVENT #1 LIQUID	kg/hr	0.048	0.00		0.00													3.38	0.00
SOLVENT #2 LIQUID	kg/hr	0	0.00		0.00													0.00	0.00
TOTAL RATE	kg/hr	1.2	116.4	12.0	0.05	128.4	128.4	128.4	125.0	224	224	125.0	0.0	0.0	125.0	125.0	22.2	3.4	0.0
TEMPERATURE	°C	85	88	20.0	74	74	74	74	10	0	20	10	-20	-10	20	29.84	29.84	10	10
HUMIDITY SOLVENT #1	kg/kg DG		0.0389	0.0000		0.0351	0.0351	0.0351	0.0079			0.0079			0.0079	0.0079	0.0079		
HUMIDITY SOLVENT #2	kg/kg DG		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000			0.0000			0.0000	0.0000	0.0000		
PRESSURE	mm WC		425			275	150	150	125			100			100	920	920		
PRESSURE	barg			6.0						0	0		0.2	0.1				0.02	0.02
GAS DENSITY	kg/m3		0.9960	8.344		1.0239	1.0118	1.0118	1.2572			1.2542			1.2114	1.2642	1.2642		
LIQUID/SOLIDS DENSITY	kg/m3	300	0.0000		300					1000	1000		900	900				1000	900
GAS FLOW	m3/h		116.8	1.44		125.4	126.9	126.9	99.4			99.6			103.2	98.9	17.5		
LIQUID FLOW	l/h									224	224		0.0	0.0				3.4	0.0
SOLIDS FLOW	m3/h	0.0040			0.0002														
COMMENTS:	-			INTER-MITTENT	-	-	-	-	-	glycol-water as coolant		-	Syltherm XLT as		-	-	average over hr.	-	-

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Polypeptide 25026-001 **SOLVENT #2** DCM

Table modified for MM-CC: one fan, 2 condensers

STREAM NUMBER	-	1	2	2A	2B	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
COMPONENTS:	**Unit**	**ATOMIZ. GAS**	**FEED**	**FEED PREESURE NOZZLE**	**FEED TWO-FLUID NOZZLE**	**RECYCLE GAS**	**MAKEUP GAS**	**GAS AFTER MAKE UP**	**AIR INLET**	**GAS AFTER AIR INLET**	**GAS TO HEATER**	**GAS AFTER HEATER**	**INLET AFTER HEPA**	**EMERG. VENT**	**DRYER INLET**	**NOZZLE COOLING GAS**	**NOZZLE COOLING FAN**	**WARM NOZZLE GAS**	**NOZZLE GAS AFTER HEPA**	**CHAMBER OUTLET**
DRY GAS	kg/hr	20			20	100	0	100	0.0	100.0	100	100	100	0	100	0	0	0	0	120
SOLVENT #1 VAPOR	kg/hr	0				0.00	0.0	0.00	0.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
SOLVENT #2 VAPOR	kg/hr	0				10.50	0.0	10.50	0.0	10.50	10.50	10.50	10.50	0.00	10.50	0.00	0.00	0.00	0.00	24.11
DRY SOLIDS	kg/hr		2.4	0.0	2.4															2.42
SOLVENT #1 LIQUID	kg/hr		0.0	0.0	0.0															0.000
SOLVENT #2 LIQUID	kg/hr		13.7	0.0	13.7															0.075
TOTAL RATE	kg/hr	20	16.1	0.0	16.1	111	0	111	0	111	111	111	111	0	111	0	0	0	0	146.6
TEMPERATURE	°C	20	20	20	20	30.8	20	29.8	20	29.8	29.8	110	110	110	110	29.8	31.8	50	50	50
HUMIDITY SOLVENT #1	kg/kg DG	0				0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
HUMIDITY SOLVENT #2	kg/kg DG	0				0.1050	0.0000	0.1050		0.1050	0.1050	0.1050	0.1050	0.1050	0.1050	0.1050	0.1050	0.1050	0.1050	0.2009
PRESSURE	mm WC					1000		1000	0	1000	1000	950	825	825	825	**825**	1075	975	825	675
PRESSURE	barg	5	0	50	0.5		6													
GAS DENSITY	kg/m3	6.9118				1.3158	8.0612	1.3201	1.1647	1.3201	1.3201	1.0392	1.0277	1.0277	1.0277	1.2997	1.3201	1.2349	1.2185	1.2677
LIQUID/SOLIDS DENSITY	kg/m3		1000																	
GAS FLOW	m3/h	2.89				83.98	0.00	83.70	0.00	83.70	83.70	106.33	107.52	0.00	107.52	0.00	0.00	0.00	0.00	113.68
LIQUID FLOW	l/h		16.1	0.0	16.1															
SOLIDS FLOW	m3/h																			
Duct diameter	in.	1	0.5		0.5	4	1.5	4	2	4	4	4	4	2	4	4	4	4	1.5	4
Duct diameter	mm	25	13		13	102	38	102	51	102	102	102	102	51	102	102	102	102	38	102
Fluid velocity	m/s	1.6				2.9	0.0	2.9	0.0	2.9	2.9	3.6	3.7	0.0	3.7	0.0	0.0	0.0	0.0	3.9
COMMENTS:	-	-	-	-	-	-	-	-	for open cycle/de purging	-	-	-	-	rupture disk	-	-	-	-	-	-

STREAM NUMBER	-	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36
COMPONENTS:	**Unit**	**CYCLONE POWDER**	**BF INLET**	**BAGHOUSE PULSE N2**	**BF POWDER**	**BF GAS OUTLET**	**HEPA OUTLET**	**CONDEN-SER # 1 GAS IN**	**CONDEN-SER # 1 GAS OUT**	**COOLANT # 1 IN**	**COOLANT # 1 OUT**	**CONDEN-SER # 2 GAS OUT**	**COOLANT # 2 IN**	**COOLANT # 2 OUT**	**SUPPLY FAN INLET**	**SUPPLY FAN OUTLET**	**PROCESS VENT**	**CONDEN-SATE # 1**	**CONDEN-SATE # 2**	**GAS DISPERSER COOLING AIR**
DRY GAS	kg/hr		120.0	12.0		132.0	132.0	132.0	132.0			132.0			132.0	132.0	32.0			0.0
SOLVENT #1 VAPOR	kg/hr		0.0	0.0		0.0	0.0	0.0	0.00			0.00			0.00	0.00	0.00			0
SOLVENT #2 VAPOR	kg/hr		24.1	0.0		24.1	24.1	24.1	24.11			13.86			13.86	13.86	3.36			
DRY SOLIDS	kg/hr	2.32	0.10		0.10															
SOLVENT #1 LIQUID	kg/hr	0.00	0.00		0.00													0.00	0.00	
SOLVENT #2 LIQUID	kg/hr	0.07	0.00		0.00													0.00	10.25	
TOTAL RATE	kg/hr	2.39	144.21	12.00	0.10	156.1	156.1	156.1	156.1	0.0	0.0	145.9	421.4	421.4	145.9	145.9	35.4	0.00	10.25	0.0
TEMPERATURE	°C	45	48	20	38	38	38	38	38	0	20	-30	-45	-25	20	30.8	30.8	38	-30	20
HUMIDITY SOLVENT #1	kg/kg DG		0.0000	0		0.0000	0.0000	0.0000	0.0000			0.0000			0.0000	0.0000	0.0000			0.0070
HUMIDITY SOLVENT #2	kg/kg DG		0.2009	0		0.1827	0.1827	0.1827	0.1827			0.1050			0.1050	0.1050	0.1050			
PRESSURE	mm WC		475			325	200	200	175			150			100	1000	1000			150
PRESSURE	barg			6.00									0.2	0.1				0.02	0.02	
GAS DENSITY	kg/m3		1.2524	8.0612		1.2625	1.2477	1.2477	1.2447			1.5214			1.2559	1.3158	1.3158			1.2164
LIQUID/SOLIDS DENSITY	kg/m3	300			300					1000	1000		900	900				1000	900	
GAS FLOW	m3/h		115.07	1.49		123.66	125.12	125.12	125.42			95.87			116.14	110.85	26.87			0.00
LIQUID FLOW	l/h									0	0		468	468				0.0	11.4	
SOLIDS FLOW	m3/h	0.008			0.000															
Duct diameter	in.		4	0.5		4	4	4	4	1		4	1		4	4	2	0.5	0.5	
Duct diameter	mm		102	13		102	102	102	102	25		102	25		102	102	51	13	13	
Fluid velocity	m/s		3.9	3.1		4.2	4.3	4.3	4.3	0.0		3.3	0.3		4.0	3.8	3.7	0.0	0.0	
COMMENTS:	-	96% efficiency	-	INTER-MITTENT	-	-	-	-	-	glycol-water as coolant	-	-	Syltherm XLT as coolant	-	-	-	average over hr.	-	-	-

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