

## BURNERS

**SP-800-M-101**  
**Rev. 1**  
**06/01/01**  
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DESIGN PROCESS REQUIREMENTS									
Process Conditions	A-104, Front Wall Burner Assembly			A-106 A/B, Afterburner Burner Assembly			A-102, A-105 A/B, Kiln & ABC Aqueous Waste Lances	A-101, Direct Burn Lance	A-103, Kiln Sludge Lance
	Propane	Liquid Waste	Fuel Oil	Propane	Liquid Waste	Fuel Oil			
Temperature °F	40 - 110	40 - 110	40 - 110	40 - 110	40 - 110	40 - 110	40 - 110	40 - 110	40 - 110
Available psig/psid	> 8 psig	≥ 15 psi blend, 10 psid air/ blend	≥ 15 psi blend, 10 psid air/blend	> 8 psig	≥ 15 psi blend, 10 psid air/blend	≥ 15 psi blend, 10 psid air/ blend	60 psig	≥5 psi atomizing air	≥5 psi atomizing air
Specific Gravity	0.12#/ft <sup>3</sup>	0.8 - 1.6	0.8 - 0.95	0.12#/ft <sup>3</sup>	0.8 - 1.6	0.8 - 0.95	0.95 - 1.0	--	--
Viscosity (Cp)	0.01	≤ 100	≤ 42	0.01	≤ 50	≤ 42	≤ 100	≤ 1,500	≤ 1,500
Particle Size (inch)	--	--	--	--	--	--	--	--	--
High Heating Value	2,500 Btu/scf	13,500 Btu/lb	19,400 Btu/lb	2,500 Btu/scf	13,500 Btu/lb	19,400 Btu/lb	0 - 2,000 Btu/lb	--	--
Maximum Heat Release	80 million Btu/hr			50 million Btu/hr each			--	--	--
Excess Combustion Air	15 %			15 %			--	--	--
Differential Air Pressure	6.0 inches W.C.			4.5 inches W.C.			--	--	--
Turndown Ratio for burner capacity is 8:1, based upon volume									

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Burner/Lance	Flow (lbs/min) Maximum Design	Burner/Lance	Flow (lbs/min) Maximum Design
A-101 Direct Burn	70	A-105B, ABC Aqueous	60
A-102, Kiln Aqueous	60	A-106A, ABC Waste Liquid	90
A-103, Kiln Sludge	200	A-106B, ABC Waste Liquid	90
A-104, Kiln Waste Liquid	90	A-106A, ABC Fuel Oil	28
A-104, Kiln Fuel Oil	54	A-106B, ABC Fuel Oil	28
A-105A, ABC Aqueous	60		
<b>OPERATION AND CONTROL</b>			
Operation: 24 hours/day			
Operational Instrumentation: 3 Factory Mutual approved Hardwired Flame Safety Systems; 2 flame scanners on each burner assembly - one for the pilot and one for the main burner with either one satisfying the burner permissive; air pressure regulators; "in-position" switches for guns and lances.			

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MATERIALS OF CONSTRUCTION				
Burner Assemblies	Air atomized waste liquid guns, 316SS material	High temp. components: Type 304/316 stainless steel or compatible with the waste stream	Waste Liquid contact components: Type 316L stainless steel or equal	High alumina burner block with SS tile mounting sleeve or equal
Lances with waste liquid contact: 316SS material or compatible with process material				
MECHANICAL				
Kiln Front Wall Burner Assembly:	McGill type BCC-19-SP combination burner	air atomized fuel oil guns with atomizing nozzle and quick release oil bodies	air atomized waste liquid guns with McGill, Ripco, Rollins-WL, or equal tips. Note: equal tip is an air atomized nozzle with sufficient atomization to assure necessary dispersement	
Afterburner Burner Assembly	McGill type BCC-11-SP combination burner	air atomized fuel oil guns with atomizing nozzle and quick-release oil bodies	air atomized waste liquid guns with McGill, Ripco, Rollins-WL, or equal tips.	
Propane Gas Pilots, each burner assembly	Burner Light Off: 350,000 BTU/hr. heat release at 10 psig fuel pressure		Burner Flame Established: 100,000 BTU/hr. heat release at 1 psig fuel	
Lances/Guns, Each	Quick-release type guns		"In-position" switch	