

표 ESStb-M15, 노즐 질식 유동 상태 (입구 포화 압력 및 건도 기준) - 1/10

건도 %	0.1 kg/cm ² a (tsat = 45.43 oC)				0.2 kg/cm ² a (tsat = 59.64 oC)				0.3 kg/cm ² a (tsat = 68.65 oC)				건도 %
	WperA	Pc	Hc	Velc	WperA	Pc	Hc	Velc	WperA	Pc	Hc	Velc	
100	5.825	0.0582	598.6	392.7	11.43	0.1162	603.7	401.4	16.95	0.1741	606.9	406.7	100
95	5.972	0.0582	570.9	382.6	11.72	0.1163	576.5	391.1	17.37	0.1743	580.0	396.3	95
90	6.131	0.0583	543.3	372.2	12.03	0.1164	549.3	380.5	17.83	0.1744	553.1	385.4	90
85	6.303	0.0583	515.6	361.6	12.36	0.1165	522.2	369.5	18.33	0.1746	526.2	374.4	85
80	6.491	0.0584	488.0	350.5	12.73	0.1166	495.0	358.3	18.87	0.1748	499.3	363.0	80
75	6.696	0.0585	460.4	339.2	13.13	0.1168	467.8	346.6	19.47	0.1751	472.4	351.2	75
70	6.923	0.0585	432.7	327.5	13.57	0.1170	440.6	334.6	20.12	0.1753	445.5	339.0	70
65	7.174	0.0586	405.1	315.3	14.06	0.1171	413.4	322.1	20.84	0.1756	418.6	326.3	65
60	7.454	0.0587	377.4	302.6	14.61	0.1174	386.2	309.1	21.65	0.1760	391.8	313.2	60
55	7.771	0.0588	349.8	289.4	15.23	0.1176	359.0	295.6	22.56	0.1764	364.9	299.4	55
50	8.131	0.0590	322.1	275.6	15.93	0.1179	331.8	281.5	23.60	0.1769	338.0	285.1	50
45	8.547	0.0591	294.5	261.0	16.74	0.1183	304.6	266.6	24.79	0.1774	311.1	269.9	45
40	9.034	0.0593	266.9	245.6	17.68	0.1187	277.5	250.7	26.18	0.1781	284.2	253.9	40
35	9.615	0.0596	239.2	229.1	18.81	0.1193	250.3	233.9	27.84	0.1790	257.3	236.8	35
30	10.33	0.0599	211.6	211.4	20.19	0.1200	223.1	215.8	29.87	0.1802	230.4	218.4	30
25	11.22	0.0604	183.9	192.2	21.92	0.1210	195.9	196.0	32.41	0.1817	203.4	198.4	25
20	12.40	0.0610	156.3	170.8	24.20	0.1224	168.7	174.1	35.75	0.1839	176.5	176.1	20
15	14.06	0.0620	128.6	146.4	27.39	0.1245	141.5	149.1	40.41	0.1873	149.6	150.8	15
10	16.65	0.0637	100.9	117.4	32.32	0.1282	114.3	119.4	47.60	0.1930	122.7	120.7	10
5	21.63	0.0676	73.3	79.5	41.71	0.1364	87.0	80.7	61.15	0.2057	95.7	81.5	5
4	23.33	0.0691	67.7	69.9	44.89	0.1394	81.6	71.0	65.71	0.2104	90.3	71.6	4
3	25.56	0.0711	62.2	59.1	49.01	0.1436	76.1	59.9	71.58	0.2167	84.9	60.4	3
2	28.68	0.0742	56.6	46.4	54.74	0.1498	70.6	47.0	79.71	0.2261	79.5	47.4	2
1	33.72	0.0795	51.0	30.4	63.84	0.1604	65.1	30.8	92.51	0.2419	74.1	31.1	1

건도 %	0.4 kg/cm ² a (tsat = 75.39 oC)				0.5 kg/cm ² a (tsat = 80.83 oC)				0.6 kg/cm ² a (tsat = 85.43 oC)				건도 %
	WperA	Pc	Hc	Velc	WperA	Pc	Hc	Velc	WperA	Pc	Hc	Velc	
100	22.41	0.2320	609.3	410.6	27.83	0.2897	611.2	413.7	33.22	0.3475	612.7	416.2	100
95	22.97	0.2322	582.6	400.0	28.53	0.2900	584.7	403.0	34.05	0.3479	586.4	405.5	95
90	23.58	0.2324	555.9	389.1	29.28	0.2904	558.2	392.0	34.94	0.3483	560.1	394.4	90
85	24.23	0.2326	529.3	378.0	30.09	0.2907	531.7	380.8	35.91	0.3487	533.7	383.0	85
80	24.95	0.2329	502.6	366.4	30.98	0.2911	505.2	369.1	36.97	0.3492	507.4	371.3	80
75	25.73	0.2333	475.9	354.5	31.95	0.2915	478.7	357.1	38.12	0.3497	481.0	359.3	75
70	26.59	0.2336	449.2	342.2	33.01	0.2919	452.2	344.7	39.39	0.3503	454.7	346.8	70
65	27.55	0.2341	422.6	329.4	34.20	0.2925	425.7	331.8	40.80	0.3510	428.3	333.7	65
60	28.61	0.2346	395.9	316.1	35.51	0.2932	399.2	318.4	42.37	0.3517	402.0	320.3	60
55	29.81	0.2351	369.2	302.2	37.00	0.2939	372.7	304.4	44.14	0.3527	375.6	306.2	55
50	31.17	0.2358	342.5	287.6	38.69	0.2947	346.2	289.7	46.15	0.3538	349.3	291.4	50
45	32.74	0.2366	315.8	272.4	40.63	0.2958	319.7	274.3	48.46	0.3550	322.9	275.9	45
40	34.58	0.2376	289.2	256.1	42.90	0.2971	293.2	257.9	51.16	0.3566	296.6	259.4	40
35	36.76	0.2388	262.5	238.9	45.60	0.2987	266.7	240.5	54.37	0.3586	270.2	241.9	35
30	39.42	0.2405	235.8	220.3	48.88	0.3008	240.2	221.8	58.27	0.3612	243.9	223.0	30
25	42.76	0.2426	209.1	200.0	53.01	0.3035	213.7	201.4	63.16	0.3646	217.5	202.4	25
20	47.14	0.2456	182.4	177.6	58.40	0.3074	187.2	178.7	69.56	0.3694	191.2	179.7	20
15	53.23	0.2502	155.7	152.0	65.89	0.3134	160.7	152.9	78.43	0.3766	164.8	153.7	15
10	62.60	0.2581	129.0	121.6	77.39	0.3235	134.1	122.3	92.01	0.3890	138.4	122.9	10
5	80.16	0.2753	102.3	82.0	98.83	0.3453	107.6	82.4	117.2	0.4155	112.0	82.8	5
4	86.02	0.2817	96.9	72.0	106.0	0.3533	102.2	72.4	125.6	0.4253	106.7	72.7	4
3	93.57	0.2903	91.6	60.8	115.1	0.3641	96.9	61.1	136.3	0.4382	101.4	61.4	3
2	104.0	0.3027	86.2	47.7	127.7	0.3798	91.6	47.9	150.9	0.4570	96.1	48.2	2
1	120.2	0.3238	80.8	31.3	147.2	0.4059	86.2	31.5	173.5	0.4882	90.8	31.7	1

단위: WperA (kg/hr/cm²) ; Pc (kg/cm² a) ; Hc (kcal/kg) ; Velc (m/s)

주1 : 표 상단의 노즐 입구 포화 압력과 좌우측의 노즐 입구 건도는 유속이 0 인 정지 상태 기준입니다.

주2 : WperA, Pc, Hc 및 Velc는 노즐 목(Throat)에서의 상태입니다.

주3 : 표 ESStb-M15 전체 상태는 습증기 상태로 질식 유속(Velc)이 음속과 같지 않습니다.

표 ESStb-M15, 노즐 질식 유동 상태 (입구 포화 압력 및 건도 기준) - 2/10

건도 %	0.7 kg/cm ² a (tsat = 89.42 oC)				0.8 kg/cm ² a (tsat = 92.96 oC)				0.9 kg/cm ² a (tsat = 96.15 oC)				건도 %
	WperA	Pc	Hc	Velc	WperA	Pc	Hc	Velc	WperA	Pc	Hc	Velc	
100	38.57	0.4053	614.1	418.4	43.91	0.4631	615.3	420.3	49.22	0.5207	616.3	422.0	100
95	39.54	0.4057	587.9	407.6	45.00	0.4636	589.2	409.4	50.45	0.5213	590.3	411.1	95
90	40.58	0.4061	561.7	396.5	46.19	0.4640	563.1	398.3	51.77	0.5219	564.4	399.8	90
85	41.70	0.4066	535.5	385.1	47.47	0.4646	537.0	386.8	53.21	0.5226	538.4	388.3	85
80	42.93	0.4072	509.2	373.2	48.86	0.4653	510.9	374.9	54.76	0.5234	512.4	376.4	80
75	44.27	0.4078	483.0	361.1	50.38	0.4660	484.8	362.7	56.47	0.5242	486.4	364.1	75
70	45.74	0.4086	456.8	348.5	52.05	0.4669	458.7	350.0	58.34	0.5251	460.4	351.4	70
65	47.37	0.4094	430.6	335.5	53.91	0.4679	432.6	336.9	60.42	0.5262	434.4	338.3	65
60	49.19	0.4103	404.4	321.9	55.98	0.4689	406.5	323.3	62.73	0.5275	408.5	324.5	60
55	51.24	0.4114	378.2	307.7	58.30	0.4702	380.4	309.1	65.33	0.5290	382.5	310.3	55
50	53.56	0.4127	352.0	292.9	60.94	0.4718	354.4	294.1	68.29	0.5307	356.5	295.3	50
45	56.24	0.4143	325.8	277.3	63.98	0.4735	328.3	278.4	71.69	0.5328	330.5	279.5	45
40	59.37	0.4162	299.6	260.7	67.53	0.4758	302.2	261.8	75.65	0.5353	304.5	262.8	40
35	63.08	0.4185	273.3	243.1	71.74	0.4785	276.1	244.1	80.36	0.5385	278.5	245.0	35
30	67.59	0.4216	247.1	224.1	76.86	0.4821	250.0	225.0	86.08	0.5426	252.5	225.8	30
25	73.25	0.4257	220.9	203.4	83.27	0.4868	223.9	204.2	93.24	0.5481	226.6	204.9	25
20	80.63	0.4314	194.7	180.4	91.63	0.4934	197.8	181.2	102.6	0.5557	200.6	181.8	20
15	90.86	0.4401	168.4	154.3	103.2	0.5035	171.6	154.9	115.5	0.5671	174.5	155.5	15
10	106.5	0.4547	142.2	123.4	120.8	0.5205	145.5	123.8	135.1	0.5864	148.5	124.2	10
5	135.4	0.4859	115.9	83.1	153.4	0.5565	119.4	83.4	171.2	0.6273	122.5	83.6	5
4	144.9	0.4973	110.6	73.0	164.1	0.5696	114.1	73.2	183.0	0.6421	117.2	73.4	4
3	157.1	0.5125	105.4	61.6	177.7	0.5871	108.9	61.8	198.1	0.6618	112.0	62.0	3
2	173.8	0.5345	100.1	48.3	196.3	0.6121	103.6	48.5	218.6	0.6899	106.8	48.7	2
1	199.4	0.5706	94.8	31.8	224.8	0.6533	98.3	32.0	249.9	0.7359	101.5	32.1	1

건도 %	1 kg/cm ² a (tsat = 99.06 oC)				2 kg/cm ² a (tsat = 119.60 oC)				3 kg/cm ² a (tsat = 132.86 oC)				건도 %
	WperA	Pc	Hc	Velc	WperA	Pc	Hc	Velc	WperA	Pc	Hc	Velc	
100	54.52	0.5785	617.3	423.5	106.8	1.155	623.7	433.5	158.2	1.731	627.6	439.3	100
95	55.88	0.5791	591.4	412.5	109.4	1.156	598.6	422.3	162.1	1.733	602.9	427.9	95
90	57.34	0.5797	565.5	401.3	112.3	1.158	573.4	410.7	166.3	1.736	578.2	416.1	90
85	58.93	0.5806	539.6	389.7	115.3	1.160	548.2	398.8	170.9	1.739	553.5	404.1	85
80	60.65	0.5814	513.7	377.7	118.7	1.162	523.1	386.5	175.8	1.742	528.9	391.6	80
75	62.54	0.5824	487.9	365.4	122.4	1.164	497.9	373.9	181.2	1.746	504.2	378.8	75
70	64.61	0.5835	462.0	352.6	126.4	1.166	472.7	360.8	187.1	1.750	479.5	365.5	70
65	66.90	0.5847	436.1	339.4	130.8	1.169	447.6	347.2	193.6	1.755	454.8	351.7	65
60	69.46	0.5861	410.2	325.7	135.8	1.172	422.4	333.1	200.9	1.760	430.1	337.4	60
55	72.34	0.5878	384.3	311.3	141.3	1.176	397.2	318.3	209.0	1.766	405.5	322.4	55
50	75.61	0.5897	358.4	296.3	147.6	1.181	372.1	302.9	218.3	1.773	380.8	306.8	50
45	79.36	0.5922	332.6	280.4	154.9	1.186	346.9	286.6	228.8	1.782	356.1	290.3	45
40	83.74	0.5950	306.7	263.7	163.3	1.193	321.7	269.5	241.2	1.792	331.4	272.8	40
35	88.94	0.5986	280.8	245.8	173.2	1.201	296.6	251.1	255.7	1.805	306.7	254.2	35
30	95.26	0.6032	254.9	226.6	185.3	1.211	271.4	231.4	273.3	1.822	282.0	234.1	30
25	103.2	0.6094	229.0	205.6	200.3	1.224	246.2	209.9	295.1	1.843	257.3	212.3	25
20	113.4	0.6179	203.1	182.3	219.8	1.243	221.0	186.0	323.3	1.873	232.6	188.2	20
15	127.6	0.6307	177.2	155.9	246.5	1.271	195.8	158.9	361.7	1.917	207.9	160.7	15
10	149.2	0.6525	151.3	124.5	286.7	1.318	170.6	126.8	419.1	1.990	183.2	128.2	10
5	188.8	0.6982	125.3	83.8	358.8	1.413	145.4	85.4	520.7	2.135	158.4	86.5	5
4	201.8	0.7147	120.1	73.6	381.9	1.447	140.3	75.0	552.9	2.186	153.4	76.0	4
3	218.3	0.7366	114.9	62.1	411.1	1.491	135.2	63.4	593.2	2.251	148.4	64.4	3
2	240.6	0.7678	109.7	48.8	450.0	1.552	130.1	50.1	646.4	2.342	143.5	51.1	2
1	274.6	0.8187	104.4	32.3	507.9	1.650	125.0	33.6	724.1	2.482	138.5	34.7	1

단위: WperA (kg/hr/cm²) ; Pc (kg/cm² a) ; Hc (kcal/kg) ; Velc (m/s)

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표 ESStb-M15, 노즐 질식 유동 상태 (입구 포화 압력 및 건도 기준) - 3/10

건도 %	4 kg/cm ² a (tsat = 142.91 oC)				5 kg/cm ² a (tsat = 151.10 oC)				6 kg/cm ² a (tsat = 158.07 oC)				건도 %
	WperA	Pc	Hc	Velc	WperA	Pc	Hc	Velc	WperA	Pc	Hc	Velc	
100	209.2	2.3070	630.3	443.3	259.8	2.8834	632.4	446.3	310.2	3.4596	634.0	448.7	100
95	214.3	2.3104	606.0	431.8	266.2	2.8877	608.4	434.7	317.7	3.4647	610.3	437.0	95
90	219.8	2.3143	581.7	419.9	273.0	2.8926	584.4	422.7	325.8	3.4706	586.6	425.0	90
85	225.8	2.3182	557.4	407.7	280.4	2.8975	560.4	410.5	334.6	3.4779	563.0	412.6	85
80	232.3	2.3226	533.1	395.2	288.4	2.9036	536.5	397.8	344.1	3.4852	539.2	399.9	80
75	239.4	2.3280	508.8	382.2	297.1	2.9103	512.5	384.7	354.5	3.4933	515.5	386.7	75
70	247.1	2.3334	484.5	368.8	306.7	2.9176	488.5	371.2	365.9	3.5028	491.8	373.1	70
65	255.7	2.3402	460.2	354.8	317.3	2.9262	464.5	357.2	378.5	3.5131	468.1	359.0	65
60	265.2	2.3475	435.9	340.4	329.0	2.9359	440.5	342.6	392.4	3.5255	444.4	344.3	60
55	275.9	2.3563	411.6	325.2	342.2	2.9475	416.6	327.3	408.1	3.5394	420.7	329.0	55
50	288.0	2.3666	387.3	309.4	357.1	2.9609	392.6	311.4	425.8	3.5563	397.0	312.9	50
45	301.9	2.3783	363.0	292.8	374.2	2.9768	368.6	294.6	446.0	3.5761	373.3	296.0	45
40	318.0	2.3930	338.7	275.1	394.0	2.9957	344.6	276.8	469.4	3.5995	349.6	278.2	40
35	337.0	2.4115	314.4	256.3	417.3	3.0189	320.6	257.9	497.0	3.6288	325.9	259.1	35
30	359.9	2.4345	290.1	236.1	445.4	3.0488	296.6	237.5	530.2	3.6654	302.2	238.7	30
25	388.3	2.4647	265.8	214.0	480.2	3.0879	272.6	215.4	571.2	3.7138	278.4	216.4	25
20	424.8	2.5062	241.4	189.6	524.9	3.1416	248.6	190.8	623.7	3.7797	254.7	191.7	20
15	474.5	2.5668	217.1	162.0	585.3	3.2197	224.6	163.0	694.6	3.8749	231.0	163.8	15
10	548.1	2.6659	192.7	129.3	674.5	3.3455	200.5	130.1	798.7	4.0280	207.2	130.8	10
5	677.1	2.8622	168.3	87.3	829.3	3.5920	176.4	88.0	978.0	4.3246	183.4	88.7	5
4	717.6	2.9291	163.4	76.9	877.5	3.6751	171.6	77.6	1033.4	4.4235	178.6	78.3	4
3	768.0	3.0150	158.5	65.3	937.1	3.7819	166.7	66.1	1101.5	4.5502	173.8	66.8	3
2	833.8	3.1337	153.6	52.0	1014.5	3.9271	161.9	52.8	1189.5	4.7208	169.0	53.6	2
1	928.8	3.3143	148.7	35.8	1124.7	4.1450	157.0	36.8	1313.4	4.9743	164.2	37.8	1

건도 %	7 kg/cm ² a (tsat = 164.17 oC)				8 kg/cm ² a (tsat = 169.61 oC)				9 kg/cm ² a (tsat = 174.53 oC)				건도 %
	WperA	Pc	Hc	Velc	WperA	Pc	Hc	Velc	WperA	Pc	Hc	Velc	
100	360.4	4.0360	635.4	450.6	410.4	4.6127	636.6	452.2	460.2	5.1896	637.6	453.5	100
95	369.1	4.0429	612.0	438.8	420.3	4.6205	613.4	440.4	471.3	5.1984	614.6	441.7	95
90	378.5	4.0497	588.5	426.8	430.9	4.6293	590.1	428.2	483.3	5.2083	591.5	429.5	90
85	388.6	4.0574	565.1	414.4	442.5	4.6381	566.9	415.8	496.1	5.2192	568.5	417.0	85
80	399.6	4.0668	541.6	401.6	455.0	4.6488	543.7	403.0	510.1	5.2313	545.5	404.1	80
75	411.7	4.0770	518.2	388.3	468.6	4.6605	520.5	389.7	525.3	5.2445	522.5	390.8	75
70	424.8	4.0881	494.7	374.7	483.5	4.6742	497.2	375.9	542.0	5.2599	499.5	377.1	70
65	439.4	4.1010	471.3	360.5	500.0	4.6888	474.0	361.7	560.4	5.2775	476.5	362.8	65
60	455.5	4.1155	447.8	345.7	518.3	4.7064	450.8	346.9	580.8	5.2972	453.4	347.9	60
55	473.6	4.1326	424.3	330.4	538.7	4.7260	427.5	331.5	603.7	5.3203	430.4	332.4	55
50	494.0	4.1522	400.9	314.2	561.9	4.7494	404.3	315.3	629.4	5.3478	407.4	316.2	50
45	517.3	4.1762	377.4	297.3	588.2	4.7767	381.1	298.3	658.9	5.3796	384.4	299.1	45
40	544.3	4.2044	354.0	279.3	618.8	4.8109	357.8	280.2	692.9	5.4181	361.3	281.0	40
35	576.1	4.2394	330.5	260.2	654.7	4.8510	334.6	261.1	732.8	5.4642	338.3	261.8	35
30	614.3	4.2838	307.0	239.6	697.7	4.9027	311.4	240.4	780.7	5.5236	315.3	241.1	30
25	661.3	4.3411	283.6	217.2	750.8	4.9701	288.1	217.9	839.6	5.6005	292.2	218.6	25
20	721.5	4.4188	260.1	192.5	818.5	5.0609	264.8	193.1	914.7	5.7037	269.2	193.7	20
15	802.6	4.5325	236.6	164.4	909.4	5.1918	241.6	165.0	1015.2	5.8532	246.1	165.6	15
10	921.1	4.7128	213.0	131.4	1041.9	5.3998	218.3	132.0	1161.2	6.0894	223.0	132.5	10
5	1123.7	5.0588	189.4	89.3	1266.7	5.7953	194.9	89.9	1407.5	6.5332	199.8	90.5	5
4	1185.8	5.1742	184.7	79.0	1335.3	5.9252	190.2	79.6	1482.2	6.6782	195.2	80.2	4
3	1262.0	5.3195	180.0	67.5	1419.0	6.0902	185.5	68.2	1573.0	6.8606	190.5	68.8	3
2	1359.8	5.5151	175.2	54.4	1525.9	6.3090	180.8	55.2	1688.4	7.1023	185.9	55.9	2
1	1496.1	5.8014	170.5	38.8	1673.5	6.6263	176.1	39.8	1846.3	7.4484	181.2	40.7	1

단위: WperA (kg/hr/cm²) ; Pc (kg/cm² a) ; Hc (kcal/kg) ; Velc (m/s)

주1 : 표 상단의 노즐 입구 포화 압력과 좌우측의 노즐 입구 건도는 유속이 0 인 정지 상태 기준입니다.

주2 : WperA, Pc, Hc 및 Velc는 노즐 목(Throat)에서의 상태입니다.

주3 : 표 ESStb-M15 전체 상태는 습증기 상태로 질식 유속(Velc)이 음속과 같지 않습니다.

표 ESStb-M15, 노즐 질식 유동 상태 (입구 포화 압력 및 건도 기준) - 4/10

건도 %	10 kg/cm ² a (tsat = 179.04 oC)				12 kg/cm ² a (tsat = 187.08 oC)				14 kg/cm ² a (tsat = 194.14 oC)				건도 %
	WperA	Pc	Hc	Velc	WperA	Pc	Hc	Velc	WperA	Pc	Hc	Velc	
100	510.0	5.7667	638.4	454.6	609.3	6.9218	639.8	456.4	708.4	8.0778	640.9	457.8	100
95	522.3	5.7765	615.6	442.8	623.9	6.9349	617.4	444.5	725.3	8.0931	618.8	445.8	95
90	535.4	5.7875	592.8	430.6	639.6	6.9481	594.9	432.3	743.4	8.1102	596.7	433.6	90
85	549.7	5.8009	570.0	418.0	656.5	6.9642	572.5	419.7	763.0	8.1290	574.5	420.9	85
80	565.1	5.8143	547.2	405.1	674.8	6.9818	550.0	406.7	784.2	8.1495	552.4	407.9	80
75	581.9	5.8302	524.3	391.8	694.8	7.0009	527.5	393.3	807.2	8.1735	530.2	394.4	75
70	600.4	5.8473	501.5	378.0	716.6	7.0228	505.1	379.4	832.5	8.2008	508.1	380.5	70
65	620.7	5.8668	478.7	363.7	740.7	7.0477	482.6	365.0	860.2	8.2299	485.9	366.1	65
60	643.2	5.8900	455.9	348.7	767.4	7.0756	460.1	350.1	891.0	8.2640	463.8	351.1	60
55	668.4	5.9157	433.0	333.2	797.2	7.1078	437.6	334.5	925.4	8.3034	441.6	335.5	55
50	696.8	5.9462	410.2	316.9	830.8	7.1459	415.2	318.2	964.1	8.3495	419.5	319.0	50
45	729.2	5.9828	387.4	299.8	869.1	7.1913	392.7	300.9	1008.2	8.4025	397.3	301.8	45
40	766.6	6.0255	364.5	281.7	913.3	7.2440	370.2	282.8	1059.0	8.4674	375.2	283.6	40
35	810.6	6.0792	341.7	262.4	965.1	7.3099	347.7	263.4	1118.5	8.5460	353.0	264.2	35
30	863.2	6.1451	318.9	241.7	1027.0	7.3934	325.2	242.6	1189.5	8.6434	330.8	243.4	30
25	927.9	6.2318	296.0	219.1	1103.0	7.4989	302.7	220.0	1276.3	8.7716	308.6	220.7	25
20	1010.1	6.3490	273.1	194.2	1199.2	7.6425	280.2	195.1	1386.2	8.9408	286.5	195.8	20
15	1120.1	6.5162	250.3	166.0	1327.5	7.8461	257.7	166.9	1531.9	9.1818	264.2	167.6	15
10	1279.2	6.7799	227.3	132.9	1511.8	8.1639	235.1	133.8	1740.3	9.5543	242.0	134.6	10
5	1546.1	7.2719	204.4	91.0	1817.7	8.7513	212.5	92.1	2082.5	10.233	219.7	93.1	5
4	1626.6	7.4305	199.8	80.8	1909.0	8.9388	208.0	81.9	2183.7	10.448	215.2	83.0	4
3	1724.1	7.6307	195.1	69.5	2018.9	9.1732	203.4	70.7	2305.0	10.713	210.7	72.0	3
2	1847.5	7.8944	190.5	56.7	2156.8	9.4764	198.9	58.2	2455.7	11.057	206.2	59.6	2
1	2015.0	8.2692	185.9	41.6	2341.3	9.9042	194.3	43.4	2654.8	11.528	201.7	45.2	1

건도 %	16 kg/cm ² a (tsat = 200.44 oC)				18 kg/cm ² a (tsat = 206.16 oC)				20 kg/cm ² a (tsat = 211.40 oC)				건도 %
	WperA	Pc	Hc	Velc	WperA	Pc	Hc	Velc	WperA	Pc	Hc	Velc	
100	807.4	9.2347	641.8	458.8	906.2	10.393	642.5	459.6	1005.0	11.554	643.0	460.0	100
95	826.5	9.2543	620.0	446.8	927.6	10.415	620.9	447.5	1028.6	11.578	621.7	448.0	95
90	847.0	9.2738	598.1	434.5	950.6	10.439	599.3	435.2	1054.0	11.605	600.4	435.7	90
85	869.2	9.2953	576.3	421.8	975.3	10.465	577.8	422.5	1081.4	11.635	579.1	423.0	85
80	893.2	9.3207	554.4	408.8	1002.2	10.494	556.2	409.4	1111.0	11.666	557.8	409.9	80
75	919.4	9.3480	532.6	395.3	1031.4	10.525	534.6	395.9	1143.2	11.703	536.4	396.4	75
70	948.0	9.3793	510.7	381.4	1063.3	10.560	513.0	382.0	1178.3	11.745	515.1	382.4	70
65	979.4	9.4144	488.9	366.9	1098.3	10.601	491.5	367.5	1217.0	11.791	493.8	367.9	65
60	1014.3	9.4555	467.0	351.8	1137.2	10.648	469.9	352.4	1259.8	11.842	472.5	352.9	60
55	1053.1	9.5004	445.1	336.2	1180.5	10.700	448.3	336.8	1307.5	11.903	451.2	337.2	55
50	1096.9	9.5551	423.3	319.8	1229.2	10.762	426.7	320.3	1361.0	11.974	429.8	320.7	50
45	1146.6	9.6176	401.4	302.5	1284.5	10.834	405.1	303.1	1421.9	12.055	408.5	303.5	45
40	1203.9	9.6918	379.6	284.3	1348.2	10.922	383.5	284.8	1491.8	12.152	387.2	285.2	40
35	1270.9	9.7855	357.7	264.8	1422.5	11.028	361.9	265.3	1573.4	12.272	365.8	265.8	35
30	1350.8	9.8988	335.8	244.0	1511.0	11.157	340.3	244.5	1670.3	12.421	344.5	244.9	30
25	1448.2	10.047	313.9	221.3	1618.8	11.327	318.7	221.8	1788.3	12.609	323.1	222.3	25
20	1571.2	10.243	292.0	196.4	1754.6	11.551	297.1	196.9	1936.4	12.860	301.8	197.4	20
15	1733.8	10.520	270.1	168.2	1933.4	11.865	275.5	168.8	2131.0	13.212	280.4	169.3	15
10	1965.1	10.948	248.2	135.3	2186.6	12.344	253.8	136.0	2405.2	13.744	258.9	136.6	10
5	2341.5	11.715	226.2	94.1	2595.1	13.199	232.0	95.0	2843.9	14.684	237.5	96.0	5
4	2451.8	11.955	221.7	84.1	2713.9	13.464	227.7	85.2	2970.5	14.972	233.2	86.2	4
3	2583.3	12.252	217.3	73.2	2854.7	13.790	223.3	74.4	3120.0	15.324	228.8	75.6	3
2	2745.6	12.631	212.9	61.0	3027.4	14.201	218.9	62.4	3301.9	15.766	224.5	63.8	2
1	2957.4	13.145	208.4	46.9	3250.2	14.754	214.5	48.6	3534.5	16.354	220.2	50.3	1

단위: WperA (kg/hr/cm²) ; Pc (kg/cm² a) ; Hc (kcal/kg) ; Velc (m/s)

주1 : 표 상단의 노즐 입구 포화 압력과 좌우측의 노즐 입구 건도는 유속이 0 인 정지 상태 기준입니다.

주2 : WperA, Pc, Hc 및 Velc는 노즐 목(Throat)에서의 상태입니다.

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표 ESStb-M15, 노즐 질식 유동 상태 (입구 포화 압력 및 건도 기준) - 5/10

건도 %	22 kg/cm ² a (tsat = 216.25 oC)				24 kg/cm ² a (tsat = 220.77 oC)				26 kg/cm ² a (tsat = 225.01 oC)				건도 %
	WperA	Pc	Hc	Velc	WperA	Pc	Hc	Velc	WperA	Pc	Hc	Velc	
100	1103.8	12.714	643.4	460.4	1202.7	13.878	643.7	460.6	1301.6	15.041	644.0	460.7	100
95	1129.7	12.741	622.3	448.4	1230.7	13.908	622.9	448.6	1331.8	15.076	623.3	448.7	95
90	1157.4	12.773	601.3	436.0	1260.8	13.940	602.1	436.3	1364.3	15.110	602.7	436.4	90
85	1187.3	12.806	580.2	423.3	1293.3	13.978	581.2	423.5	1399.2	15.152	582.1	423.7	85
80	1219.7	12.843	559.1	410.2	1328.4	14.019	560.4	410.4	1437.0	15.199	561.5	410.5	80
75	1254.9	12.883	538.1	396.7	1366.5	14.066	539.5	396.9	1478.1	15.250	540.9	397.0	75
70	1293.3	12.929	517.0	382.7	1408.2	14.116	518.7	383.0	1523.0	15.304	520.3	383.1	70
65	1335.5	12.980	495.9	368.3	1453.9	14.174	497.9	368.4	1572.2	15.368	499.7	368.6	65
60	1382.2	13.039	474.8	353.2	1504.4	14.239	477.0	353.4	1626.5	15.441	479.0	353.5	60
55	1434.2	13.106	453.8	337.5	1560.7	14.315	456.2	337.7	1687.0	15.523	458.4	337.8	55
50	1492.6	13.187	432.7	321.0	1623.9	14.403	435.3	321.2	1754.9	15.618	437.8	321.4	50
45	1558.9	13.278	411.6	303.8	1695.5	14.502	414.5	304.0	1831.8	15.733	417.2	304.1	45
40	1634.9	13.388	390.5	285.5	1777.6	14.625	393.6	285.7	1919.9	15.866	396.5	285.9	40
35	1723.6	13.520	369.4	266.1	1873.3	14.772	372.8	266.3	2022.4	16.025	375.9	266.6	35
30	1828.8	13.686	348.3	245.2	1986.6	14.953	351.9	245.5	2143.7	16.224	355.2	245.8	30
25	1956.7	13.896	327.2	222.6	2124.1	15.185	331.0	223.0	2290.6	16.478	334.6	223.2	25
20	2116.9	14.172	306.1	197.8	2296.0	15.490	310.1	198.2	2474.0	16.808	313.9	198.5	20
15	2326.7	14.562	284.9	169.8	2520.6	15.914	289.2	170.3	2712.9	17.269	293.2	170.7	15
10	2621.0	15.147	263.8	137.3	2834.3	16.550	268.2	137.9	3045.1	17.957	272.5	138.5	10
5	3088.3	16.168	242.5	96.9	3328.6	17.652	247.2	97.8	3565.0	19.135	251.7	98.7	5
4	3222.1	16.479	238.2	87.2	3469.1	17.986	243.0	88.2	3711.8	19.487	247.5	89.3	4
3	3379.4	16.855	234.0	76.7	3633.7	18.384	238.8	77.9	3883.0	19.909	243.3	79.1	3
2	3569.9	17.325	229.7	65.1	3831.7	18.882	234.6	66.5	4088.0	20.433	239.2	67.8	2
1	3810.9	17.946	225.4	51.9	4080.3	19.530	230.3	53.5	4343.2	21.106	235.0	55.1	1

건도 %	28 kg/cm ² a (tsat = 229.00 oC)				30 kg/cm ² a (tsat = 232.78 oC)				32 kg/cm ² a (tsat = 236.37 oC)				건도 %
	WperA	Pc	Hc	Velc	WperA	Pc	Hc	Velc	WperA	Pc	Hc	Velc	
100	1400.5	16.207	644.1	460.7	1499.6	17.372	644.2	460.6	1598.8	18.541	644.2	460.4	100
95	1432.9	16.242	623.7	448.7	1534.2	17.412	624.0	448.6	1635.5	18.584	624.2	448.5	95
90	1467.7	16.283	603.3	436.4	1571.3	17.456	603.8	436.3	1674.9	18.631	604.2	436.1	90
85	1505.2	16.330	582.9	423.6	1611.2	17.507	583.6	423.6	1717.4	18.686	584.3	423.4	85
80	1545.7	16.378	562.5	410.6	1654.4	17.562	563.4	410.5	1763.2	18.745	564.3	410.4	80
75	1589.7	16.433	542.1	397.1	1701.3	17.621	543.2	397.0	1813.0	18.811	544.3	396.9	75
70	1637.7	16.495	521.7	383.1	1752.5	17.687	523.0	383.1	1867.2	18.881	524.3	383.0	70
65	1690.4	16.566	501.3	368.6	1808.5	17.764	502.8	368.6	1926.7	18.963	504.3	368.5	65
60	1748.5	16.645	480.9	353.6	1870.4	17.848	482.6	353.6	1992.3	19.057	484.3	353.5	60
55	1813.2	16.734	460.5	337.9	1939.2	17.947	462.4	337.9	2065.2	19.162	464.3	337.9	55
50	1885.7	16.840	440.1	321.5	2016.3	18.060	442.2	321.5	2146.8	19.287	444.3	321.5	50
45	1967.8	16.963	419.7	304.2	2103.5	18.196	422.0	304.3	2239.1	19.428	424.3	304.3	45
40	2061.8	17.106	399.2	286.1	2203.4	18.353	401.8	286.1	2344.7	19.600	404.3	286.2	40
35	2171.0	17.281	378.8	266.7	2319.2	18.540	381.6	266.8	2467.1	19.803	384.2	266.9	35
30	2300.2	17.499	358.4	245.9	2456.1	18.775	361.4	246.1	2611.4	20.053	364.2	246.3	30
25	2456.3	17.773	337.9	223.5	2621.3	19.071	341.1	223.7	2785.5	20.370	344.2	223.9	25
20	2650.9	18.132	317.5	198.8	2826.7	19.456	320.9	199.1	3001.5	20.784	324.1	199.4	20
15	2903.6	18.627	297.0	171.1	3092.9	19.990	300.6	171.5	3280.7	21.350	304.0	171.9	15
10	3253.7	19.366	276.5	139.1	3460.2	20.774	280.3	139.7	3664.7	22.186	283.9	140.2	10
5	3797.8	20.617	255.9	99.6	4027.2	22.096	259.9	100.6	4253.4	23.577	263.7	101.5	5
4	3950.4	20.989	251.8	90.3	4185.3	22.488	255.8	91.3	4416.5	23.987	259.7	92.3	4
3	4127.8	21.433	247.6	80.2	4368.3	22.953	251.7	81.3	4604.7	24.471	255.6	82.5	3
2	4339.0	21.977	243.5	69.1	4585.2	23.521	247.6	70.4	4826.8	25.057	251.6	71.7	2
1	4600.0	22.674	239.3	56.7	4851.3	24.238	243.5	58.3	5097.4	25.791	247.5	59.8	1

단위: WperA (kg/hr/cm²); Pc (kg/cm² a); Hc (kcal/kg); Velc (m/s)

주1 : 표 상단의 노즐 입구 포화 압력과 좌우측의 노즐 입구 건도는 유속이 0 인 정지 상태 기준입니다.

주2 : WperA, Pc, Hc 및 Velc는 노즐 목(Throat)에서의 상태입니다.

주3 : 표 ESStb-M15 전체 상태는 습증기 상태로 질식 유속(Velc)이 음속과 같지 않습니다.

표 ESStb-M15, 노즐 질식 유동 상태 (입구 포화 압력 및 건도 기준) - 6/10

건도 %	34 kg/cm ² a (tsat = 239.79 oC)				36 kg/cm ² a (tsat = 243.06 oC)				38 kg/cm ² a (tsat = 246.19 oC)				건도 %
	WperA	Pc	Hc	Velc	WperA	Pc	Hc	Velc	WperA	Pc	Hc	Velc	
100	1698.1	19.708	644.2	460.3	1797.5	20.880	644.1	459.9	1897.1	22.054	644.0	459.5	100
95	1737.0	19.758	624.4	448.2	1838.6	20.933	624.5	447.9	1940.3	22.110	624.6	447.6	95
90	1778.7	19.808	604.6	435.9	1882.6	20.986	604.9	435.7	1986.6	22.165	605.2	435.3	90
85	1823.6	19.866	584.8	423.2	1929.9	21.047	585.3	423.0	2036.3	22.235	585.8	422.6	85
80	1872.1	19.928	565.0	410.2	1981.0	21.118	565.7	409.9	2090.0	22.304	566.3	409.7	80
75	1924.7	19.999	545.2	396.8	2036.4	21.192	546.1	396.5	2148.3	22.388	546.9	396.2	75
70	1982.0	20.078	525.4	382.8	2096.8	21.276	526.5	382.6	2211.7	22.476	527.5	382.4	70
65	2044.8	20.169	505.6	368.3	2163.0	21.372	506.9	368.2	2281.2	22.578	508.1	368.0	65
60	2114.1	20.268	485.8	353.4	2235.9	21.478	487.3	353.3	2357.8	22.694	488.6	353.0	60
55	2191.1	20.381	466.0	337.8	2316.9	21.601	467.6	337.7	2442.7	22.824	469.2	337.5	55
50	2277.2	20.513	446.2	321.4	2407.4	21.742	448.0	321.4	2537.6	22.972	449.8	321.2	50
45	2374.5	20.667	426.4	304.3	2509.7	21.904	428.4	304.3	2644.7	23.149	430.3	304.1	45
40	2485.7	20.849	406.6	286.2	2626.4	22.102	408.8	286.1	2767.0	23.353	410.9	286.1	40
35	2614.5	21.065	386.7	267.0	2761.6	22.335	389.1	267.0	2908.4	23.603	391.4	267.0	35
30	2766.3	21.335	366.9	246.4	2920.6	22.620	369.5	246.4	3074.6	23.905	372.0	246.5	30
25	2949.0	21.675	347.1	224.1	3111.9	22.976	349.8	224.3	3274.1	24.285	352.5	224.4	25
20	3175.4	22.115	327.2	199.6	3348.4	23.447	330.2	199.9	3520.5	24.781	333.0	200.1	20
15	3467.3	22.717	307.3	172.3	3652.6	24.079	310.5	172.7	3836.6	25.449	313.5	173.1	15
10	3867.2	23.597	287.4	140.8	4067.8	25.007	290.7	141.4	4266.7	26.423	293.9	141.9	10
5	4476.5	25.054	267.4	102.4	4696.6	26.532	270.9	103.2	4914.0	28.010	274.3	104.1	5
4	4644.3	25.481	263.4	93.3	4868.9	26.975	267.0	94.3	5090.3	28.464	270.4	95.3	4
3	4837.3	25.984	259.4	83.6	5066.3	27.494	263.0	84.7	5291.8	28.998	266.5	85.8	3
2	5064.0	26.585	255.4	73.0	5297.2	28.114	259.0	74.3	5526.5	29.638	262.5	75.6	2
1	5338.5	27.341	251.3	61.3	5575.1	28.883	255.0	62.8	5807.4	30.422	258.6	64.3	1

건도 %	40 kg/cm ² a (tsat = 249.20 oC)				42 kg/cm ² a (tsat = 252.10 oC)				44 kg/cm ² a (tsat = 254.89 oC)				건도 %
	WperA	Pc	Hc	Velc	WperA	Pc	Hc	Velc	WperA	Pc	Hc	Velc	
100	1996.9	23.224	643.9	459.2	2096.9	24.400	643.7	458.7	2197.0	25.578	643.5	458.2	100
95	2042.2	23.283	624.6	447.2	2144.3	24.462	624.6	446.8	2246.5	25.642	624.6	446.3	95
90	2090.7	23.351	605.4	434.9	2195.0	24.534	605.6	434.5	2299.5	25.718	605.7	434.1	90
85	2142.9	23.419	586.2	422.3	2249.6	24.605	586.5	422.0	2356.5	25.793	586.8	421.5	85
80	2199.2	23.497	566.9	409.3	2308.5	24.687	567.4	409.0	2417.9	25.884	567.9	408.5	80
75	2260.2	23.580	547.7	396.0	2372.3	24.780	548.4	395.6	2484.5	25.981	549.0	395.2	75
70	2326.7	23.678	528.4	382.1	2441.8	24.882	529.3	381.8	2556.9	26.088	530.1	381.4	70
65	2399.5	23.786	509.2	367.7	2517.8	24.995	510.2	367.5	2636.2	26.206	511.2	367.2	65
60	2479.6	23.908	489.9	352.8	2601.4	25.123	491.2	352.6	2723.4	26.346	492.3	352.3	60
55	2568.4	24.044	470.7	337.3	2694.2	25.272	472.1	337.1	2819.9	26.502	473.4	336.8	55
50	2667.7	24.205	451.4	321.1	2797.7	25.441	453.0	320.9	2927.7	26.679	454.5	320.7	50
45	2779.7	24.391	432.2	304.0	2914.5	25.636	433.9	303.9	3049.2	26.883	435.6	303.8	45
40	2907.3	24.611	412.9	286.0	3047.5	25.867	414.8	286.0	3187.5	27.130	416.7	285.8	40
35	3054.8	24.874	393.6	267.0	3201.0	26.149	395.7	266.9	3346.9	27.420	397.8	266.9	35
30	3228.1	25.192	374.3	246.6	3381.2	26.482	376.6	246.6	3533.9	27.775	378.8	246.6	30
25	3435.8	25.597	355.0	224.5	3596.9	26.907	357.5	224.6	3757.4	28.221	359.9	224.7	25
20	3691.8	26.115	335.7	200.4	3862.3	27.451	338.4	200.6	4032.0	28.790	340.9	200.8	20
15	4019.5	26.818	316.4	173.4	4201.3	28.189	319.2	173.8	4381.9	29.563	321.9	174.1	15
10	4463.8	27.833	297.0	142.5	4659.3	29.250	300.0	143.0	4853.2	30.664	302.9	143.6	10
5	5128.6	29.484	277.6	105.0	5340.7	30.953	280.8	105.9	5550.3	32.421	283.8	106.8	5
4	5308.8	29.953	273.7	96.3	5524.4	31.440	276.9	97.3	5737.2	32.920	280.0	98.3	4
3	5514.0	30.499	269.8	87.0	5733.0	31.998	273.0	88.1	5949.0	33.495	276.2	89.2	3
2	5752.1	31.154	265.9	76.9	5974.2	32.665	269.2	78.1	6193.0	34.177	272.3	79.4	2
1	6035.6	31.950	262.0	65.8	6259.8	33.475	265.3	67.3	6480.4	34.994	268.5	68.7	1

단위: WperA (kg/hr/cm²) ; Pc (kg/cm² a) ; Hc (kcal/kg) ; Velc (m/s)

주1 : 표 상단의 노즐 입구 포화 압력과 좌우측의 노즐 입구 건도는 유속이 0 인 정지 상태 기준입니다.

주2 : WperA, Pc, Hc 및 Velc는 노즐 목(Throat)에서의 상태입니다.

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표 ESStb-M15, 노즐 질식 유동 상태 (입구 포화 압력 및 건도 기준) - 7/10

건도 %	46 kg/cm ² a (tsat = 257.59 oC)				48 kg/cm ² a (tsat = 260.20 oC)				50 kg/cm ² a (tsat = 262.73 oC)				건도 %
	WperA	Pc	Hc	Velc	WperA	Pc	Hc	Velc	WperA	Pc	Hc	Velc	
100	2297.4	26.757	643.3	457.7	2397.9	27.938	643.0	457.1	2498.7	29.114	642.7	456.5	100
95	2348.9	26.825	624.5	445.8	2451.6	28.008	624.4	445.3	2554.4	29.193	624.3	444.7	95
90	2404.2	26.903	605.8	433.6	2509.0	28.090	605.9	433.1	2614.1	29.279	605.9	432.5	90
85	2463.5	26.987	587.1	421.0	2570.7	28.178	587.3	420.6	2678.1	29.370	587.5	420.1	85
80	2527.5	27.077	568.4	408.1	2637.2	28.278	568.8	407.6	2747.2	29.474	569.1	407.2	80
75	2596.8	27.178	549.6	394.8	2709.3	28.383	550.2	394.4	2821.9	29.590	550.7	393.9	75
70	2672.2	27.296	530.9	381.0	2787.6	28.500	531.6	380.7	2903.1	29.712	532.3	380.2	70
65	2754.6	27.420	512.2	366.8	2873.2	28.635	513.1	366.5	2991.9	29.852	513.9	366.1	65
60	2845.3	27.566	493.4	352.0	2967.3	28.787	494.5	351.7	3089.5	30.011	495.5	351.3	60
55	2945.7	27.729	474.7	336.6	3071.5	28.963	475.9	336.3	3197.4	30.194	477.1	336.0	55
50	3057.7	27.920	456.0	320.4	3187.7	29.157	457.4	320.2	3317.6	30.402	458.7	320.0	50
45	3183.8	28.133	437.2	303.6	3318.4	29.385	438.8	303.4	3452.9	30.640	440.3	303.2	45
40	3327.3	28.391	418.5	285.7	3467.0	29.655	420.2	285.6	3606.5	30.927	421.9	285.4	40
35	3492.6	28.700	399.7	266.8	3638.1	29.977	401.6	266.8	3783.3	31.262	403.5	266.6	35
30	3686.2	29.071	381.0	246.6	3838.2	30.370	383.0	246.6	3989.9	31.665	385.0	246.6	30
25	3917.4	29.537	362.2	224.8	4077.0	30.856	364.4	224.9	4236.0	32.172	366.6	225.0	25
20	4201.0	30.132	343.4	201.0	4369.3	31.477	345.8	201.2	4536.8	32.819	348.1	201.4	20
15	4561.5	30.935	324.6	174.5	4740.1	32.309	327.1	174.8	4917.7	33.685	329.6	175.2	15
10	5045.5	32.075	305.7	144.2	5236.3	33.493	308.4	144.7	5425.6	34.906	311.1	145.2	10
5	5757.5	33.894	286.8	107.7	5962.3	35.356	289.7	108.6	6164.9	36.823	292.5	109.5	5
4	5947.4	34.400	283.0	99.3	6155.1	35.877	285.9	100.3	6360.3	37.354	288.8	101.2	4
3	6162.1	34.989	279.2	90.3	6372.3	36.475	282.2	91.4	6579.9	37.964	285.1	92.5	3
2	6408.5	35.680	275.4	80.6	6620.9	37.178	278.4	81.9	6830.3	38.672	281.3	83.1	2
1	6697.4	36.511	271.6	70.1	6911.1	38.016	274.6	71.6	7121.5	39.520	277.6	73.0	1

건도 %	55 kg/cm ² a (tsat = 268.72 oC)				60 kg/cm ² a (tsat = 274.32 oC)				65 kg/cm ² a (tsat = 279.56 oC)				건도 %
	WperA	Pc	Hc	Velc	WperA	Pc	Hc	Velc	WperA	Pc	Hc	Velc	
100	2751.7	32.078	641.9	454.8	3006.3	35.045	640.9	453.0	3262.6	38.029	639.8	451.0	100
95	2812.6	32.166	623.9	443.1	3072.2	35.141	623.3	441.4	3333.5	38.132	622.5	439.5	95
90	2877.6	32.260	605.9	431.0	3142.7	35.250	605.7	429.4	3409.3	38.251	605.3	427.6	90
85	2947.5	32.367	587.9	418.6	3218.3	35.368	588.1	417.0	3490.5	38.378	588.1	415.3	85
80	3022.8	32.481	569.9	405.8	3299.7	35.499	570.4	404.3	3578.0	38.521	570.8	402.7	80
75	3104.2	32.609	551.9	392.6	3387.6	35.639	552.8	391.2	3672.4	38.679	553.6	389.7	75
70	3192.6	32.750	533.9	379.0	3483.1	35.792	535.2	377.8	3774.8	38.854	536.4	376.3	70
65	3289.1	32.904	515.9	365.0	3587.3	35.968	517.6	363.8	3886.4	39.044	519.1	362.5	65
60	3395.1	33.085	497.9	350.3	3701.5	36.166	500.0	349.3	4008.7	39.266	501.9	348.1	60
55	3512.2	33.287	479.9	335.1	3827.6	36.393	482.4	334.1	4143.5	39.512	484.7	333.1	55
50	3642.6	33.522	461.9	319.2	3967.7	36.649	464.7	318.4	4293.2	39.790	467.4	317.5	50
45	3789.0	33.784	443.8	302.6	4124.9	36.942	447.1	301.9	4460.8	40.115	450.2	301.1	45
40	3954.9	34.099	425.8	285.0	4302.8	37.287	429.5	284.5	4650.2	40.488	432.9	283.9	40
35	4145.5	34.475	407.8	266.4	4506.6	37.697	411.8	266.1	4866.8	40.933	415.6	265.7	35
30	4367.7	34.925	389.8	246.5	4743.7	38.187	394.2	246.4	5118.0	41.464	398.4	246.3	30
25	4631.6	35.476	371.7	225.2	5024.4	38.795	376.5	225.3	5414.6	42.123	381.1	225.4	25
20	4952.8	36.187	353.6	201.9	5364.8	39.564	358.9	202.3	5772.9	42.948	363.8	202.7	20
15	5357.3	37.127	335.6	176.0	5791.2	40.575	341.2	176.9	6219.6	44.027	346.4	177.7	15
10	5892.7	38.443	317.4	146.6	6351.3	41.981	323.4	148.0	6801.9	45.511	329.1	149.4	10
5	6662.0	40.471	299.3	111.7	7146.3	44.113	305.6	113.9	7618.6	47.733	311.7	116.2	5
4	6862.9	41.028	295.6	103.7	7351.7	44.684	302.1	106.2	7827.4	48.328	308.2	108.6	4
3	7087.5	41.659	292.0	95.3	7579.9	45.336	298.5	98.0	8058.2	48.994	304.7	100.7	3
2	7341.6	42.391	288.3	86.2	7836.4	46.083	294.9	89.3	8316.0	49.756	301.2	92.3	2
1	7634.1	43.257	284.7	76.5	8129.0	46.954	291.3	80.0	8607.7	50.629	297.7	83.4	1

단위: WperA (kg/hr/cm²) ; Pc (kg/cm² a) ; Hc (kcal/kg) ; Velc (m/s)

주1 : 표 상단의 노즐 입구 포화 압력과 좌우측의 노즐 입구 건도는 유속이 0 인 정지 상태 기준입니다.

주2 : WperA, Pc, Hc 및 Velc는 노즐 목(Throat)에서의 상태입니다.

주3 : 표 ESStb-M15 전체 상태는 습증기 상태로 질식 유속(Velc)이 음속과 같지 않습니다.

표 ESStb-M15, 노즐 질식 유동 상태 (입구 포화 압력 및 건도 기준) - 8/10

건도 %	70 kg/cm ² a (tsat = 284.51 oC)				75 kg/cm ² a (tsat = 289.20 oC)				80 kg/cm ² a (tsat = 293.65 oC)				건도 %
	WperA	Pc	Hc	Velc	WperA	Pc	Hc	Velc	WperA	Pc	Hc	Velc	
100	3520.6	41.013	638.6	449.0	3780.7	44.016	637.3	446.7	4042.9	47.028	635.8	444.4	100
95	3596.5	41.133	621.7	437.5	3861.5	44.144	620.8	435.3	4128.5	47.174	619.7	433.0	95
90	3677.6	41.261	604.8	425.7	3947.7	44.290	604.3	423.6	4219.8	47.321	603.6	421.4	90
85	3764.4	41.406	588.0	413.5	4040.1	44.446	587.8	411.5	4317.6	47.487	587.4	409.5	85
80	3857.8	41.560	571.1	401.0	4139.3	44.611	571.2	399.2	4422.5	47.672	571.3	397.2	80
75	3958.6	41.731	554.2	388.1	4246.3	44.803	554.7	386.4	4535.6	47.877	555.1	384.6	75
70	4067.8	41.928	537.4	374.8	4362.1	45.004	538.2	373.2	4658.0	48.102	539.0	371.5	70
65	4186.7	42.133	520.5	361.1	4488.2	45.233	521.7	359.6	4791.0	48.346	522.8	358.1	65
60	4316.8	42.372	503.6	346.8	4626.0	45.490	505.2	345.5	4936.3	48.620	506.6	344.1	60
55	4460.1	42.637	486.8	332.0	4777.6	45.783	488.7	330.8	5096.0	48.932	490.5	329.6	55
50	4619.1	42.944	469.9	316.5	4945.5	46.112	472.2	315.5	5272.6	49.284	474.3	314.4	50
45	4796.7	43.295	453.0	300.3	5132.9	46.488	455.6	299.5	5469.4	49.694	458.1	298.5	45
40	4997.2	43.696	436.1	283.3	5344.1	46.927	439.1	282.6	5690.8	50.162	442.0	281.9	40
35	5226.0	44.183	419.2	265.2	5584.6	47.440	422.6	264.8	5942.4	50.709	425.8	264.3	35
30	5490.8	44.756	402.3	246.1	5862.1	48.053	406.0	245.9	6232.2	51.364	409.6	245.6	30
25	5802.4	45.457	385.4	225.5	6187.9	48.804	389.5	225.6	6571.2	52.155	393.4	225.6	25
20	6177.5	46.337	368.4	203.2	6578.6	49.738	372.9	203.6	6976.3	53.131	377.2	204.0	20
15	6642.6	47.482	351.5	178.5	7060.6	50.937	356.3	179.4	7473.6	54.401	360.9	180.3	15
10	7244.8	49.037	334.5	150.8	7680.3	52.567	339.7	152.2	8108.6	56.090	344.6	153.7	10
5	8079.6	51.344	317.5	118.4	8529.8	54.938	323.0	120.7	8969.8	58.522	328.3	122.9	5
4	8290.9	51.951	314.0	111.1	8742.9	55.560	319.7	113.6	9183.7	59.147	325.1	116.1	4
3	8523.4	52.634	310.6	103.4	8976.1	56.247	316.3	106.2	9417.0	59.840	321.8	108.9	3
2	8781.5	53.395	307.2	95.4	9233.6	57.016	313.0	98.4	9673.1	60.612	318.5	101.4	2
1	9071.2	54.275	303.8	86.8	9520.7	57.895	309.6	90.1	9956.9	61.491	315.2	93.5	1

건도 %	85 kg/cm ² a (tsat = 297.89 oC)				90 kg/cm ² a (tsat = 301.95 oC)				95 kg/cm ² a (tsat = 305.84 oC)				건도 %
	WperA	Pc	Hc	Velc	WperA	Pc	Hc	Velc	WperA	Pc	Hc	Velc	
100	4307.2	50.050	634.3	441.9	4574.0	53.092	632.8	439.3	4843.2	56.134	631.1	436.6	100
95	4397.6	50.205	618.6	430.7	4669.0	53.257	617.3	428.2	4942.9	56.308	616.0	425.7	95
90	4494.0	50.371	602.8	419.2	4770.4	53.433	601.9	416.8	5049.1	56.505	600.9	414.3	90
85	4597.0	50.548	587.0	407.4	4878.7	53.620	586.4	405.1	5162.6	56.714	585.8	402.8	85
80	4707.6	50.745	571.2	395.2	4994.8	53.839	571.0	393.1	5284.1	56.934	570.7	390.9	80
75	4826.7	50.963	555.4	382.7	5119.8	54.070	555.5	380.7	5414.8	57.178	555.5	378.7	75
70	4955.5	51.201	539.6	369.8	5254.8	54.323	540.0	367.9	5555.9	57.456	540.4	366.0	70
65	5095.3	51.471	523.7	356.4	5401.2	54.608	524.6	354.7	5708.8	57.758	525.3	353.0	65
60	5247.9	51.762	507.9	342.6	5560.9	54.927	509.1	341.0	5875.3	58.094	510.2	339.5	60
55	5415.4	52.104	492.1	328.2	5735.9	55.278	493.7	326.9	6057.7	58.465	495.1	325.5	55
50	5600.4	52.478	476.3	313.3	5929.0	55.674	478.2	312.1	6258.6	58.894	479.9	310.9	50
45	5806.3	52.903	460.5	297.6	6143.6	56.135	462.7	296.6	6481.5	59.381	464.8	295.6	45
40	6037.4	53.401	444.7	281.2	6384.1	56.663	447.2	280.4	6730.9	59.926	449.7	279.6	40
35	6299.7	53.992	428.8	263.8	6656.4	57.278	431.7	263.3	7012.7	60.576	434.5	262.8	35
30	6600.9	54.677	413.0	245.4	6968.4	58.003	416.2	245.2	7334.8	61.341	419.4	244.9	30
25	6952.4	55.507	397.1	225.8	7331.4	58.882	400.7	225.8	7708.5	62.246	404.2	225.9	25
20	7370.7	56.545	381.2	204.4	7761.9	59.959	385.2	204.9	8149.9	63.370	389.0	205.3	20
15	7881.8	57.852	365.4	181.2	8285.3	61.321	369.7	182.0	8684.2	64.774	373.8	183.0	15
10	8530.0	59.606	349.4	155.1	8944.6	63.112	354.1	156.6	9352.6	66.618	358.6	158.1	10
5	9399.8	62.086	333.5	125.2	9820.3	65.639	338.5	127.5	10232	69.169	343.3	129.8	5
4	9614.0	62.719	330.3	118.6	10034	66.276	335.3	121.1	10445	69.807	340.3	123.6	4
3	9846.6	63.414	327.1	111.6	10265	66.968	332.2	114.4	10674	70.502	337.2	117.1	3
2	10101	64.192	323.9	104.4	10517	67.737	329.1	107.4	10922	71.268	334.1	110.4	2
1	10381	65.053	320.7	96.8	10793	68.594	325.9	100.1	11193	72.114	331.1	103.4	1

단위: WperA (kg/hr/cm²) ; Pc (kg/cm² a) ; Hc (kcal/kg) ; Velc (m/s)

주1 : 표 상단의 노즐 입구 포화 압력과 좌우측의 노즐 입구 건도는 유속이 0 인 정지 상태 기준입니다.

주2 : WperA, Pc, Hc 및 Velc는 노즐 목(Throat)에서의 상태입니다.

주3 : 표 ESStb-M15 전체 상태는 습증기 상태로 질식 유속(Velc)이 음속과 같지 않습니다.

표 ESStb-M15, 노즐 질식 유동 상태 (입구 포화 압력 및 건도 기준) - 9/10

건도 %	100 kg/cm ² a (tsat = 309.57 oC)				110 kg/cm ² a (tsat = 316.62 oC)				120 kg/cm ² a (tsat = 323.19 oC)				건도 %
	WperA	Pc	Hc	Velc	WperA	Pc	Hc	Velc	WperA	Pc	Hc	Velc	
100	5115.1	59.198	629.3	433.8	5667.6	65.359	625.5	427.9	6233.0	71.578	621.4	421.6	100
95	5219.4	59.381	614.6	423.0	5780.7	65.560	611.5	417.4	6354.6	71.813	608.0	411.3	95
90	5330.4	59.589	599.8	411.8	5901.0	65.789	597.4	406.5	6483.8	72.062	594.6	400.7	90
85	5448.8	59.808	585.0	400.4	6029.2	66.044	583.3	395.3	6621.3	72.340	581.2	389.8	85
80	5575.7	60.040	570.3	388.7	6166.3	66.312	569.2	383.8	6768.0	72.633	567.8	378.7	80
75	5712.0	60.309	555.5	376.5	6313.4	66.608	555.1	372.0	6925.2	72.955	554.4	367.3	75
70	5859.0	60.602	540.7	364.0	6471.7	66.930	541.0	359.9	7094.1	73.322	540.9	355.4	70
65	6018.1	60.919	525.9	351.2	6642.8	67.279	526.9	347.4	7276.2	73.703	527.5	343.3	65
60	6191.3	61.273	511.2	337.8	6828.5	67.682	512.8	334.3	7473.5	74.142	514.1	330.7	60
55	6380.7	61.676	496.4	324.0	7031.2	68.112	498.7	320.9	7688.2	74.611	500.7	317.7	55
50	6589.1	62.116	481.6	309.6	7253.5	68.609	484.6	306.9	7923.1	75.153	487.2	304.1	50
45	6820.0	62.628	466.8	294.6	7499.1	69.172	470.5	292.3	8181.8	75.753	473.8	290.0	45
40	7077.8	63.214	452.0	278.8	7772.4	69.804	456.4	277.1	8468.5	76.442	460.4	275.3	40
35	7368.5	63.886	437.2	262.2	8079.3	70.542	442.2	261.0	8789.0	77.233	446.9	259.8	35
30	7700.1	64.679	422.4	244.7	8427.5	71.401	428.1	244.0	9150.9	78.141	433.5	243.5	30
25	8083.5	65.631	407.5	225.9	8827.8	72.409	414.0	226.1	9564.4	79.210	420.0	226.2	25
20	8534.8	66.791	392.7	205.8	9295.4	73.631	399.8	206.7	10044	80.499	406.5	207.7	20
15	9078.4	68.231	377.9	183.9	9853.3	75.148	385.6	185.8	10610	82.067	393.0	187.8	15
10	9754.1	70.111	363.0	159.7	10538	77.095	371.4	162.7	11297	84.030	379.5	166.0	10
5	10634	72.687	348.1	132.2	11413	79.673	357.2	136.9	12158	86.608	366.0	141.7	5
4	10845	73.322	345.1	126.1	11620	80.304	354.3	131.3	12359	87.223	363.3	136.5	4
3	11072	74.017	342.1	119.9	11840	80.989	351.5	125.5	12572	87.882	360.6	131.1	3
2	11317	74.774	339.1	113.4	12077	81.727	348.6	119.4	12798	88.600	357.8	125.5	2
1	11583	75.604	336.1	106.7	12331	82.533	345.8	113.2	13040	89.362	355.1	119.8	1

건도 %	130 kg/cm ² a (tsat = 329.34 oC)				140 kg/cm ² a (tsat = 335.13 oC)				150 kg/cm ² a (tsat = 340.60 oC)				건도 %
	WperA	Pc	Hc	Velc	WperA	Pc	Hc	Velc	WperA	Pc	Hc	Velc	
100	6813.2	77.860	616.9	414.8	7410.5	84.208	611.9	407.6	8028.2	90.643	606.5	399.7	100
95	6942.9	78.114	604.2	404.8	7547.8	84.498	599.9	397.8	8172.5	90.955	595.2	390.3	95
90	7080.4	78.400	591.4	394.5	7693.2	84.806	587.9	387.9	8324.9	91.284	583.9	380.8	90
85	7226.6	78.701	578.7	384.0	7847.4	85.131	575.8	377.7	8486.4	91.632	572.6	371.0	85
80	7382.4	79.019	566.0	373.2	8011.5	85.490	563.8	367.3	8657.8	92.017	561.2	361.0	80
75	7549.0	79.384	553.3	362.1	8186.5	85.866	551.8	356.6	8840.3	92.438	549.9	350.7	75
70	7727.6	79.765	540.5	350.7	8373.9	86.276	539.8	345.6	9035.2	92.877	538.6	340.1	70
65	7919.8	80.193	527.8	338.9	8575.0	86.737	527.7	334.3	9243.9	93.372	527.3	329.2	65
60	8127.5	80.653	515.1	326.8	8791.8	87.250	515.7	322.5	9468.2	93.903	516.0	318.0	60
55	8352.9	81.177	502.3	314.1	9026.4	87.797	503.7	310.4	9710.3	94.470	504.7	306.5	55
50	8598.8	81.748	489.6	301.1	9281.5	88.412	491.6	297.9	9972.5	95.130	493.3	294.5	50
45	8868.6	82.399	476.8	287.5	9560.4	89.096	479.6	284.9	10258	95.844	482.0	282.1	45
40	9166.5	83.129	464.1	273.3	9867.1	89.865	467.5	271.3	10571	96.631	470.7	269.2	40
35	9498.1	83.954	451.3	258.5	10207	90.736	455.4	257.1	10916	97.547	459.3	255.7	35
30	9870.5	84.922	438.6	242.9	10586	91.727	443.4	242.2	11298	98.554	448.0	241.7	30
25	10293	86.033	425.8	226.4	11015	92.872	431.3	226.6	11727	99.725	436.6	226.8	25
20	10780	87.350	413.0	208.8	11503	94.223	419.2	209.9	12213	101.10	425.3	211.1	20
15	11349	88.953	400.2	189.9	12070	95.829	407.1	192.1	12770	102.69	413.9	194.4	15
10	12030	90.936	387.4	169.3	12738	97.794	395.0	172.8	13420	104.61	402.5	176.5	10
5	12870	93.475	374.5	146.6	13549	100.26	382.9	151.8	14194	106.98	391.1	157.1	5
4	13063	94.063	371.9	141.8	13733	100.84	380.4	147.3	14368	107.53	388.8	152.9	4
3	13267	94.697	369.4	136.8	13927	101.43	378.0	142.7	14550	108.09	386.5	148.7	3
2	13482	95.380	366.8	131.7	14130	102.08	375.6	138.0	14739	108.68	384.2	144.5	2
1	13710	96.110	364.2	126.4	14343	102.75	373.1	133.2	14937	109.32	381.9	140.1	1

단위: WperA (kg/hr/cm²) ; Pc (kg/cm² a) ; Hc (kcal/kg) ; Velc (m/s)

주1 : 표 상단의 노즐 입구 포화 압력과 좌우측의 노즐 입구 건도는 유속이 0 인 정지 상태 기준입니다.

주2 : WperA, Pc, Hc 및 Velc는 노즐 목(Throat)에서의 상태입니다.

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표 ESStb-M15, 노즐 질식 유동 상태 (입구 포화 압력 및 건도 기준) - 10/10

건도 %	160 kg/cm ² a (tsat = 345.78 oC)				180 kg/cm ² a (tsat = 355.38 oC)				200 kg/cm ² a (tsat = 364.12 oC)				건도 %
	WperA	Pc	Hc	Velc	WperA	Pc	Hc	Velc	WperA	Pc	Hc	Velc	
100	8670.3	97.174	600.4	391.1	10051	110.59	586.2	371.4	11648	124.74	567.0	345.9	100
95	8820.6	97.506	589.9	382.2	10210	110.97	577.3	363.4	11806	125.13	560.1	339.3	95
90	8979.3	97.858	579.3	373.1	10377	111.36	568.4	355.3	11971	125.54	553.1	332.6	90
85	9146.9	98.248	568.8	363.7	10553	111.78	559.4	347.0	12143	125.98	546.2	325.7	85
80	9324.6	98.639	558.2	354.2	10738	112.22	550.5	338.5	12324	126.45	539.2	318.7	80
75	9513.3	99.088	547.6	344.3	10934	112.70	541.6	329.8	12513	126.91	532.3	311.6	75
70	9714.3	99.557	537.1	334.3	11141	113.21	532.6	321.0	12711	127.42	525.3	304.4	70
65	9928.9	100.06	526.5	323.9	11360	113.76	523.7	311.9	12919	127.98	518.4	296.9	65
60	10159	100.63	515.9	313.3	11594	114.35	514.7	302.5	13138	128.55	511.4	289.4	60
55	10406	101.24	505.4	302.3	11843	114.99	505.8	292.9	13369	129.18	504.4	281.6	55
50	10673	101.90	494.8	291.0	12110	115.69	496.8	283.0	13614	129.84	497.5	273.6	50
45	10963	102.64	484.2	279.2	12396	116.46	487.9	272.8	13873	130.55	490.5	265.5	45
40	11278	103.46	473.6	267.0	12705	117.27	478.9	262.3	14148	131.31	483.6	257.1	40
35	11624	104.38	463.0	254.3	13039	118.20	470.0	251.4	14442	132.14	476.6	248.5	35
30	12006	105.42	452.4	241.1	13403	119.21	461.0	240.0	14755	133.01	469.6	239.7	30
25	12431	106.59	441.8	227.2	13801	120.33	452.0	228.3	15092	133.99	462.6	230.5	25
20	12908	107.96	431.2	212.5	14240	121.60	443.1	215.9	15454	135.04	455.7	221.1	20
15	13449	109.52	420.6	197.0	14728	123.03	434.1	203.1	15845	136.19	448.7	211.4	15
10	14072	111.37	410.0	180.5	15274	124.68	425.1	189.4	16271	137.46	441.7	201.2	10
5	14803	113.60	399.3	162.7	15893	126.57	416.1	175.1	16737	138.87	434.7	190.7	5
4	14965	114.11	397.2	158.9	16027	126.99	414.3	172.1	16836	139.17	433.3	188.5	4
3	15133	114.64	395.0	155.1	16165	127.40	412.5	169.1	16936	139.48	431.9	186.3	3
2	15308	115.20	392.9	151.2	16307	127.87	410.7	166.0	17038	139.80	430.5	184.1	2
1	15490	115.77	390.8	147.3	16454	128.33	408.9	162.9	17143	140.12	429.1	181.9	1

건도 %	220 kg/cm ² a (tsat = 372.08 oC)				건도 %
	WperA	Pc	Hc	Velc	
100	13917	140.86	531.6	301.9	100
95	14036	141.19	528.0	298.0	95
90	14158	141.51	524.3	294.0	90
85	14284	141.86	520.6	290.0	85
80	14414	142.21	517.0	286.0	80
75	14547	142.56	513.3	281.9	75
70	14685	142.93	509.6	277.7	70
65	14826	143.33	506.0	273.5	65
60	14972	143.74	502.3	269.3	60
55	15122	144.14	498.6	265.0	55
50	15277	144.57	495.0	260.6	50
45	15438	145.03	491.3	256.2	45
40	15604	145.51	487.6	251.6	40
35	15775	145.99	483.9	247.1	35
30	15953	146.50	480.3	242.4	30
25	16137	147.04	476.6	237.7	25
20	16329	147.58	472.9	233.0	20
15	16527	148.17	469.2	228.1	15
10	16734	148.79	465.6	223.1	10
5	16949	149.40	461.9	218.1	5
4	16993	149.54	461.1	217.1	4
3	17038	149.67	460.4	216.0	3
2	17083	149.81	459.7	215.0	2
1	17128	149.94	458.9	214.0	1

단위: WperA (kg/hr/cm²) ; Pc (kg/cm² a) ; Hc (kcal/kg) ; Velc (m/s)

주1 : 표 상단의 노즐 입구 포화 압력과 좌우측의 노즐 입구 건도는 유속이 0 인 정지 상태 기준입니다.

주2 : WperA, Pc, Hc 및 Velc는 노즐 목(Throat)에서의 상태입니다.

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