VISCOUS FLUID FRICTION LOSS

Loss In feet of Liquid Flowing in 100' of New Schedule 40 Steel Pipe

U.S. GPM	Pipe Size	Kinematic Viscosity-Seconds Sayboldt Universal														
		Water	100	200	300	400	500	1000	2000	3000	4000	5000	6000	8000	10,000	15,000
	1/2	10.0	25.4	53.2	81.1	111.0	139.0	278.0	556.0	822.0	1100.0	1390.0	1670.0	2220.0		
3	3/4	2.5	8.6	17.8	25.0	36.6	45.2	90.2	181.0	271.0	371.0	452.0	549.0	722.0	903.0	1352.0
	1	1.1	3.2	6.9	10.4	13.8	17.1	34.7	69.4	108.0	139.0	174.0	208.0	278.0	347.0	521.0
	3/4	6.3	14.4	30.1	46.2	61.1	76.2	152.0	305.0	457.0	610.0	761.0	915.0	1220.0	1520.0	2280.0
5	1	2.1	5.3	11.6	17.1	23.1	28.9	57.8	115.0	171.0	231.0	289.0	346.0	462.0	578.0	865.0
	1-1/4		1.8	3.9	5.8	7.6	9.7	18.2	28.3	57.7	78.5	97.0	217.0	152.0	191.0	288.0
	3/4	11.8	20.1	41.6	64.0	86.0	106.0	212.0	425.0	645.0	855.0	1060.0	1275.0	1700.0	2120.0	
7	1	3.2	7.6	15.9	24.2	32.3	40.4	82.0	164.0	245.0	328.0	411.0	493.0	655.0	820.0	1230.0
	1-1/4		2.5	5.3	8.1	10.8	13.4	26.6	53.1	80.9	109.0	138.0	162.0	214.0	265.0	400.0
	1	6.9	11.6	23.1	34.6	46.2	57.8	118.0	235.0	353.0	470.0	589.0	707.0	942.0	1178.0	1760.0
10	1-1/4	1.8	3.7	7.6	11.6	15.5	19.2	38.5	77.3	115.0	157.0	194.0	231.0	310.0	386.0	516.0
	1-1/2		1.9	4.2	6.3	8.3	10.4	20.8	41.5	62.3	83.1	104.0	124.0	166.0	206.0	312.0
	1	15.0	25.3	34.6	50.8	69.2	86.5	175.0	350.0	527.0	700.0	878.0	1055.0	1400.0	1758.0	
15	1-1/4	3.8	6.3	11.3	17.5	23.1	27.8	57.7	116.0	173.0	231.0	289.0	347.0	462.0	578.0	865.0
	1-1/2	1.7	2.8	6.3	9.2	12.5	15.7	31.2	62.2	94.8	124.0	157.0	187.0	249.0	312.0	470.0
	1	25.1	46.2	48.2	69.3	92.4	116.0	231.0	462.0	693.0	924.0	1160.0	1380.0	1840.0		
20	1-1/2	2.9	5.3	8.3	12.5	16.6	20.8	41.5	83.0	124.0	166.0	207.0	249.0	332.0	415.0	622.0
	2		1.5	3.0	4.6	6.2	7.6	15.5	31.2	46.2	62.6	78.5	94.6	127.0	155.0	231.0
	1-1/2	4.5	8.1	10.4	15.5	20.8	26.5	53.0	106.0	157.0	207.0	265.0	318.0	425.0	531.0	796.0
25	2	1.3	2.3	3.8	5.8	7.6	9.7	19.4	38.1	57.7	76.2	97.0	118.0	157.0	194.0	291.0
	2-1/2	0.5	0.97	1.74	2.8	3.7	4.6	9.2	18.4	27.7	36.9	46.2	55.5	73.9	92.5	140.0
	1-1/2	6.3	11.6	12.4	18.5	25.4	31.2	62.2	124.0	187.0	249.0	312.0	374.0	500.0	621.0	935.0
30	2	1.8	3.2	4.6	6.9	9.2	11.6	23.1	46.2	69.3	92.4	115.5	138.5	185.0	231.0	347.0
	2-1/2	0.8	1.38	2.19	3.5	4.4	5.5	11.3	22.6	33.5	43.9	55.5	67.0	88.0	111.0	166.0
	1-1/2	10.8	20.7	20.7	25.4	33.5	41.5	85.5	168.0	256.0	341.0	428.0	512.0	682.0	855.0	1280.0
40	2	3.1	6.0	6.2	9.0	12.2	15.4	31.2	62.4	92.5	124.0	157.0	189.0	250.0	311.0	470.0
	2-1/2	1.3	2.5	3.0	4.6	6.0	7.6	15.0	30.0	43.9	58.9	73.8	87.7	120.0	150.0	226.0
	1-1/2	16.4	32.0	32.0	32.0	42.0	53.0	106.0	208.0	318.0	424.0	531.0	638.0	850.0	1030.0	1590.0
50	2	4.7	8.7	9.2	11.5	15.5	19.4	39.3	78.5	118.0	157.0	196.0	235.0	314.0	393.0	588.0
	2-1/2	1.9	3.7	3.8	5.6	7.4	9.2	18.4	36.8	55.5	74.0	92.5	114.0	148.0	184.0	277.0
	2	6.6	12.2	13.4	13.6	18.4	23.1	46.2	94.8	141.0	184.0	231.0	277.0	369.0	462.0	693.0
60	2-1/2	2.7	5.3	5.6	6.7	8.8	11.1	22.2	45.0	67.0	87.8	113.0	134.0	178.0	222.0	332.0
	3	0.9	1.84	1.84	2.77	3.93	4.85	9.45	19.2	28.9	38.1	47.4	56.6	76.2	94.7	143.0
	2-1/2	3.6	6.69	7.38	7.85	10.4	13.2	25.3	53.1	78.5	102.0	127.0	152.0	203.0	253.0	380.0
70	3	1.2	2.31	2.54	3.23	4.39	5.55	11.1	22.3	33.5	43.8	55.5	67.0	87.7	111.0	166.0
	4		0.62	0.74	1.13	1.50	1.84	3.68	7.39	11.3	15.2	18.6	23.1	30.0	36.9	55.4
	2-1/2	4.7	8.55	9.95	9.95	12.0	15.0	30.0	60.0	90.0	120.0	150.0	180.0	240.0	300.0	450.0
80	3	1.6	3.0	3.23	3.93	5.08	6.47	12.7	25.4	34.6	50.8	63.5	76.2	102.0	127.0	191.0
	4		0.83	0.83	1.24	1.71	2.12	4.15	8.55	12.9	17.3	21.4	26.5	30.9	41.5	62.2
	2-1/2	7.1	12.7	15.5	15.5	15.5	18.4	38.0	75.0	111.0	148.0	185.0	222.0	295.0	370.0	555.0
100	3	2.4	4.89	5.1	5.1	6.7	8.1	15.7	32.3	48.5	63.5	78.5	94.5	125.0	157.0	235.0
	4		1.22	1.31	1.57	2.12	2.77	3.0	10.4	16.2	21.4	26.5	32.3	42.7	53.0	78.5