Loss In Feet Of Liquid Flowing In 100 Feet Of New Schedule 40 Steel Pipe

Gpm	Pipe Size	KINEMATIC VISCOSITY - SECONDS SAYBOLT UNIVERSAL 100	200	300	400	500	1000	2000	3000	4000	5000	6000	8000	10,000	15,000
3	1/2	25.9	54.5	81.5	108.1	136.3	272.6	545.2	815.4	1088.0	1360.6	1630.9	2176.0	—	—
	3/4	5.8	17.6	26.6	35.3	44.1	88.2	175.6	265.7	353.4	441.2	529.0	706.9	882.4	1323.6
	1	3.2	6.7	10.2	13.4	16.9	33.5	67.2	100.7	134.0	168.6	201.0	268.0	335.0	503.6
5	3/4	14.1	29.3	44.1	58.9	73.7	147.8	293.4	441.2	589.1	736.9	882.4	1178.1	1471.5	2208.4
	1	5.3	11.3	16.9	22.4	28.0	55.9	112.0	168.6	224.1	276.5	335.0	448.1	559.0	838.5
	1 1/4	1.8	3.7	5.5	7.6	9.5	18.7	37.4	56.1	75.1	93.8	112.5	150.2	187.1	281.8
7	3/4	19.6	41.3	61.9	82.5	103.0	205.6	411.2	619.1	824.7	1030.6	1235.9	1647.0	2060.5	—
	1	7.4	15.7	23.6	31.4	39.3	78.3	157.1	235.6	314.2	392.7	469.0	626.0	783.1	1175.8
	1 1/4	2.5	5.3	7.8	10.4	13.2	26.3	52.4	78.5	104.9	131.7	157.1	210.2	263.3	392.7
10	1	11.3	22.4	33.5	44.8	55.9	112.0	224.1	335.0	448.1	559.0	672.2	896.3	1120.4	1679.4
	1 1/4	3.7	7.6	11.3	15.0	18.7	37.4	75.1	112.5	150.2	187.1	224.1	300.3	374.2	561.3
	1 1/2	1.9	4.2	6.0	8.1	10.2	20.3	40.4	60.8	80.9	101.2	122.4	161.7	203.3	302.6
15	1	25.4	33.5	50.4	67.2	83.9	168.6	335.0	503.6	672.2	838.5	1007.2	1342.1	1679.4	—
	1 1/4	6.5	11.3	16.9	22.4	28.2	56.1	112.5	168.6	224.1	281.8	337.3	450.5	561.3	843.2
	1 1/2	3.0	6.0	9.0	12.2	15.2	30.3	60.8	91.0	122.4	152.5	182.5	242.6	302.6	455.1
20	1	41.6	41.6	67.2	89.6	112.0	224.1	448.1	672.2	896.3	1120.4	1342.1	1790.3	—	—
	1 1/2	5.3	8.1	12.2	16.2	20.3	40.4	80.9	122.4	161.7	203.3	242.6	323.4	404.3	607.5
	2	1.5	3.0	4.4	6.0	7.4	14.8	29.8	44.6	59.4	74.2	88.9	117.8	147.8	221.8
25	1 1/2	8.1	10.2	15.2	20.8	25.4	50.6	101.2	152.5	203.3	254.1	302.6	406.6	505.9	757.7
	2	2.3	3.7	5.5	7.4	9.2	18.5	37.2	55.7	74.2	92.9	111.3	147.8	184.8	279.5
	2 1/2	0.92	1.8	2.8	3.7	4.6	9.2	18.2	27.3	36.5	45.5	54.7	73.0	91.2	136.3
30	1 1/2	11.6	12.2	18.2	24.3	30.3	60.8	122.4	182.5	242.6	302.6	365.0	485.1	607.5	910.1
	2	3.2	4.4	6.7	9.0	11.1	22.2	44.6	66.8	89.0	111.3	134.0	177.9	221.8	335.0
	2 1/2	1.4	2.2	3.2	4.4	5.5	10.9	22.0	32.8	43.9	54.7	65.6	87.5	109.5	164.0
40	1 1/2	19.6	20.8	24.3	32.3	40.4	80.8	161.7	242.6	323.4	404.2	485.1	646.8	808.5	1215.1
	2	5.8	5.8	9.0	11.8	14.8	29.8	59.4	88.9	117.8	147.8	177.9	238.0	298.0	445.8
	2 1/2	2.5	3.0	4.4	5.8	7.4	14.6	29.1	43.9	58.4	73.0	87.5	117.8	145.5	219.4
50	1 1/2	28.9	32.3	32.3	40.4	50.6	101.2	203.3	302.6	404.3	505.9	607.5	808.5	1011.8	1517.7
	2	8.5	9.2	11.1	14.8	18.5	37.2	74.2	111.3	147.8	184.8	221.8	298.0	372.0	556.7
	2 1/2	3.7	3.9	5.5	7.4	9.2	18.2	36.5	54.7	73.0	91.2	109.5	145.5	182.5	272.6
60	2	11.6	13.4	13.4	17.8	22.2	44.6	89.0	134.0	177.9	221.8	268.0	355.7	445.8	667.6
	2 1/2	5.1	5.5	6.5	8.8	10.9	22.0	43.9	65.6	87.5	109.5	131.7	175.6	219.5	328.0
	3	1.8	1.8	2.8	3.7	4.6	9.2	18.5	27.5	36.7	46.0	55.2	73.5	92.0	138.6
70	2 1/2	6.5	7.4	7.9	10.2	12.7	25.7	51.1	76.7	102.1	127.1	152.5	203.3	256.4	383.5
	3	2.3	2.5	3.2	4.4	5.3	10.7	21.5	32.1	43.0	53.6	64.2	85.7	107.2	161.7
	4	0.62	0.72	1.1	1.5	1.8	3.7	7.2	10.9	14.5	18.2	21.7	28.9	36.0	54.3
80	2 1/2	8.3	9.7	9.7	11.8	14.6	29.1	58.4	87.5	117.8	145.5	175.6	233.3	291.1	439.0
	3	3.0	3.2	3.7	4.8	6.2	12.2	24.5	36.7	49.0	61.2	73.5	97.9	122.4	184.8
	4	0.83	0.83	1.2	1.7	2.1	4.2	8.3	12.5	16.6	20.6	24.7	33.0	41.3	61.9
100	2 1/2	12.2	14.1	14.8	14.8	18.5	36.5	73.0	109.5	145.5	182.5	219.5	293.4	365.0	547.5
	3	4.4	5.1	5.1	6.2	7.6	15.2	30.7	46.0	61.2	76.5	91.9	122.4	152.5	228.7
	4	1.2	1.3	1.5	2.1	2.5	5.1	10.4	15.5	20.6	25.9	31.0	41.3	51.5	77.4

TURBULENT FLOW RANGE

LAMINAR OR VISCOUS FLOW RANGE

FRICTION LOSS IN HEAD FOR VISCOUS LIQUIDS