

## Specific Gravity and Viscosity of Liquids

Liquid	Boiling point at atm press	Specific gravity			Viscosity			
		Temp		Based on water = 1 at 60°F	Temp		centistokes	SSU
		°F	°C		°F	°C		
Automatic crankcase oils SAE 10W		60	15.6	.88-.94	0	-17.8	1295-max	6M-max
SAE 10W		60	15.6	.88-.94	0	-17.8	1295-2590	6M-12M
SAE 20W		60	15.6	.88-.94	0	-17.8	2590-10350	12M-48M
SAE 20		60	15.6	.88-.94	210	98.9	5.7-9.6	45-58
SAE 30		60	15.6	.88-.94	210	98.9	9.6-12.9	58-70
SAE 40		60	15.6	.88-.94	210	98.9	12.9-16.8	70-85
SAE 50		60	15.6	.88-.94	210	98.9	16.8-22.7	85-110
Automotive gear oils SAE 75W		60	15.6	.88-.94	210	98.9	4.2 min	40 min
SAE 80W		60	15.6	.88-.94	210	98.9	7.0 min	49 min
SAE 85W		60	15.6	.88-.94	210	98.9	11.0 min	63 min
SAE 90W		60	15.6	.88-.94	210	98.9	14-25	74-120
SAE 140		60	15.6	.88-.94	210	98.9	25-43	120-200
SAE150		60	15.6	.88-.94	210	98.9	43 min	200 min
Beer		60	15.6	1.01	68	20	1.8	32(est)
Benzene (Benzol) C <sub>6</sub> H <sub>6</sub>		60	0 15.6	0.899 0.885	32 66	0 20	1.00 0.744	31
Bone oil		60	15.6	0.918	130 212	54.4 100	47.5 11.6	220 65
			46.4	8	1.014			

Boric acid, sat. $H_3BO_3$		59	15	1.025				
Brine see sodium chloride and calcium chloride								
Bromine		68 32	20 0	2.9	68	20.	0.34	
Butane-n		60	15.6	0.584	-50 30	-1.1	0.52 0.35	
Butyric acid n		60	20	0.959	68 32	20 0	1.61 2.3cp	31.6
Calcium chloride 5%		60	18.3	1.040	65	18.3	1.156	
25%		60	15.6	1.23	60	15.6	4.0	39
Carbolic acid (phenol)		60	18.3	1.08	65 194	18.3 90	11.83 1.26cp	65
Carbon tetrachloride $CCl_4$	170°F 76.7°C	68	20	1.594	68 100	20 37.8	0.612 0.53	
Carbon disulphide $CS_2$	115°F 46.2°C	32 68	0 20	1.293 1.263	32 68	0 20	0.33 0.298	
Castor oil		68 104	20 40	0.96 0.95	100 130	37.8 54.4	259-325 98-130	1200-1500 450-600
China wood oil		60	15.6	0.943	69 100	20.6 37.8	308.5 125.5	1425 580
Chloroform	142°F 61.2°C	68 140	20 60	1.489 1.413	68 140	20 60	0.38 0.35	
Cocanut oil		60	15.6	0.925	100 130	37.8 54.4	29.8-31.6 14.7-15.7	140-148 76-80
Cod oil		60	15.6	0.928	100 130	37.8 54.4	32.1 19.4	150 95
Corn oil		60	15.6	0.924	130 212	54.4 100	28.7 8.6	135 54
Corn starch solutions 22 Baume		60	15.6	1.18	70 100	21.1 37.8	32.1 27.5	150 130
24 Baume		60	15.6	1.20	70 100	21.1 37.8	129.8 95.2	600 440
25 Baume		60	15.6	1.21	70 100	21.1 37.8	303 173.2	1400 800
Cotton seed oil		60	15.6	.88-.93	100 130	37.8 54.4	37.9 20.6	176 100

Creosote		60	15.6	1.04-1.10	60 130	15.6 54.4		
Crude oil 48° API		60 130	15.6 54.4	0.79 0.76	60 130	15.6 54.4	3.8 1.6	39 31.8
40° API		60 130	15.6 54.4	0.825 0.805	60 130	15.6 54.4	9.7 3.5	55.7 38
35.6 API		60 130	15.6 154	0.847 0.824	60 130	15.6 54.4	17.8 4.9	88.4 42.3
32.6 API		60 130	15.6 154	0.862 0.84	60 130	15.6 54.4	23.2 7.1	110 46.8
Salt Creek		60 130	15.6 54.4	0.843 0.82	60 130	15.6 54.4	77 6.1	45.6
Decane-n	343°F 173°C	60	20	0.73	0 100	17.8 37.8	2.36 1.001	34 31
Diethylene glycol		60	15.6	1.12	70	21.1	32	149.7
Diethyl ether	94.4°F	68	20	0.714	68	20	0.32	
Diesel fuel oils 20		60	15.6	.82-.95	100 130	37.8 54.4	2-6 1.-3.97	32.6-45.5 -39
30		60	15.6	.82-.95	100 130	37.8 54.4	6-11.75 3.97-6.78	45.5-65 39-48
40		60	15.6	.82-.95	100 130	37.8 54.4	29.8 max 13.1 max	140 max 70 max
60		60	15.6	.82-.95	122 160	50 71.1	86.6 max 35.2 max	400 max 165 max
theacetate COOC <sub>2</sub> H <sub>3</sub>	171°F 77.2°C	15 20	15 20	0.907 0.90	59 68	15 20	0.4 0.49	
Dowtherm	494.3°	25°C	25°C	1.056	77	25		
Ethyl bromide C <sub>2</sub> H <sub>5</sub> Br	101°F 77.2°C	59	15	1.45	68	20	0.27	
Ethylene bromide	269°F 131.7°C	68	20	2.18	68	20	0.787	
Ethylene choride	183°F 837°C	68	20	1.246	68	20	0.668	
Ethylene glycol		60	15.6	1.125	70	21.1	17.8	88.4
Formic acid 10%		68	20	1.025	68	20	1.04	31

50%		68	20	1.121	68	20	1.2	31.5
80%		68	20	1.186	68	20	1.4	31.7
Conc.		60	15.6	1.221	68 77	20 25	1.48 1.57cp	31.7
Freon -11		70	21.1	1.49	70	21.1	0.21	
-12		70	21.1	1.33	70	21.1	0.27	
-21		70	21.1	1.37	70	21.1	1.45	31.7
Furfurol	161.7°C	68	20	1.159	68 77	20 25	1.45 1.49cp	31.7
Fuel oils 1		60	15.6	.82-.95	70 100	21.1 37.8	2.39-4.28 -2.69	34-40 32-35
2		60	15.6	.82-.95	70 100	21.1 37.8	3.0-7.4 2.11-4.28	36-50 33-40
3		60	15.6	.82-.95	70 100	21.1 37.8	2.69-5.84 2.06-3.97	35-45 32.8-39
5A		60	15.6	.82-.95	70 100	21.1 37.8	7.4-26.4 4.91-13.7	50-125 42-72
5B		60	15.6	.82-.95	70 100	21.1 37.8	26.4- 13.6-67.1	125- 72-310
6		60	15.6	.82-.95	122 160	50 71.1	97.4-660 37.5-172	450-3M 175-780
Gas oils		60	15.6	0.89	70 100	21.1 37.8	13.9 7.4	73 50
Gasolines a		60	15.6	0.74	60 100	15.6 37.8	0.88 0.71	
b		60	15.6	0.72	60 100	15.6 37.8	0.64	
c		60	15.6	0.68	60 100	15.6 37.8	0.46 0.40	
Glycerine 100%	554°F	68	20	1.260	68.6 100	20.3 37.8	648 176	2950 813
50% water		68	20	1.13	68 140	20 60	5.29 1.85cp	43

Glucose		60	15.6	1.35-1.44	100 150	37.8 65.6	7.7M-22M 880-2420	35M-100M 4M-11M
Heptane-n	209.2°F 98.4°C	60	15.6	0.688	0 100	-17.8 37.8	0.928 0.511	
Hexane-n	155.7°F 68.7°C	60	15.6	0.664	0 100	-17.8 37.8	0.683 0.401	
Honey					100	37.8	73.6	349
Industrial lubricants Turbine oils 685 SSU at 100°F					60 200	15.6 93.3	647 14.5	3000 77
	420 SSU				60 200	15.6 93.3	367 11	1700 63
	315 SSU				60 200	15.6 93.3	259 8	1200 52
	215 SSU				60 200	15.6 93.3	151 7.3	700 48
	150 SSU				60 200	15.6 93.3	99 6	460 45.5
Machine lubricants	#8			.88-.94	100 130	37.8 54.4	23-34 13-18	112-160 70-90
		#10		.88-.94	100 130	37.8 54.4	34-72 18-25	160-235 90-120
			#20		.88-.94	100 130	37.8 54.4	72-83 25-39
		#30				.88-.94	100 130	37.8 54.4
Cutting oils	#1				100 130	37.8 54.4	30-40 17-23	140-190 86-110
		#2			100 130	37.8 54.4	40-46 23-26	190-220 110-125
Ink, printers		60	15.6	1.0-1.4	100 130	37.8 54.4	550-2200 238-660	2500-10M 1100-3M
Insulating oil					70 100	21.1 37.8	24.1 max 11.75 max	115 max 65 max
Kerosene		60	15.6	.78-.82	68	20	2.71	35
Jet Fuel (av)	325°F	60	15.6	62	-30.	-34.4	7.9	52
Lard		60	15.6	0.96	100	37.8	62.1	287
					130	54.4	34.3	160

Lard oil		60	15.6	.91-.93	100 130	37.8 54.4	41-47.5 23.4-27.1	190-220 112-128
Linseed oil		60	15.6	.92-.94	100 130	37.8 54.4	30.5 18.94	143 93
Mercury	675.1°F 356.9°C	60	15.6	13.57	70 100	21.1 37.8	0.118 0.11	
Methyl acetate	135°F 57.2°C	68	20	0.93	68 104	20 40	0.44 0.32cp	
Methyl iodide	108°F 42.6°C	68	20	2.28	68 104	20 40	0.213 0.42cp	
Menhadden oil		60	15.6	0.93	100 130	37.8 54.4	29.8 18.2	140 90
Milk		60	15.6	1.02-1.05	68	20	1.13	31.5
Molasses A, first		60	15.6	1.40-1.46	100 130	37.8 54.4	281-5070 151-1760	1300-23500 700-8160
B, second		60	15.6	1.43-1.48	100 130	37.8 54.4	1410-13.2M 660-3.3M	6535-61180 3058-15294
C, blackstrap		60	15.6	1.46-1.49	100 130	37.8 54.4	2630-55M 1320-16.5M	12190-255M 6120-76.5M
Naphthalene	424°F 218°C	68	20	1.145	176 212	80 100	0.9 0.78cp	
Neatstool oil		60	15.6	0.917	100 130	37.8 54.4	49.7 27.5	230 130
Nitrobenzene	412°F 210.9°C	68 59	20 15	1.203 1.205	68	20	1.67	31.8
Nonane-n	302°F 150.7°C	60 68	15.6 20	0.7218 0.718	0 100	-17.8 37.8	1.728 0.807	32
Octane-n	258°F 125.6°C	60	15.6	0.7069	0 100	-17.8 37.8	1.266 0.645	31.7
Olive oil	570°F 300°C	60	15.6	.91-.92	100 130	37.8 54.4	43.2 24.1	200
Palms oil		60	15.6	0.924	100 130	37.8 54.4	47.8 26.4	
Peanut oil		60	15.6	0.92	100 130	37.8 54.4	42 23.4	200
Pentane-n		60	0 15.6	0.650 0.631	0 80	17.8 26.7	0.508 0.342	
Petrolatum		60	15.6	0.83	130	54.4	20.5	100

					160	71.1	15	77
Petroleum ether		60	15.6	0.64	60	15.6	31(est)	1.1
Propionic acid		68	20	0.99	32 68	0 20	1.52cp 1.13	31.5
Propylene glycol		68	20	1.038	70	21.1	52	241
Quenching oil (typical)		60	15.6	.86-.89			100-120	20.5-25
Rapeseed oil		68	20	0.92	100 130	37.8 54.4	54.1 31	250 145
Rosin oil		60	15.6	0.98	100 130	37.8 54.4	324.7 129.9	1500 600
Rosin (wood)		60	15.6	1.09 avg	100 200	37.8 93.3	216-11M 108-4400	1M-50M 500-20M
Sesame seed oil		60	15.6	0.923	100 130	37.8 54.4	39.6 23	184 110
Sodium chloride 5%		39	3.9	1.037	68	20	1.097	31.1
25%		39 60	3.9 15.6	1.196 1.19	60	15.6	2.4	34
Sodium hydroxide (caustic soda) 20%		60	15.6	1.22	65	18.3	4.0	39.4
30%		60	15.6	1.33	65	18.3	10.0	58.1
40%		60	15.6	1.43	65	18.3		110.1
Soya bean oil		60	15.6	.924-.928	100 130	37.8 5.4	35.4 19.64	165 96
Sperm oil		60	15.6	1.35-1.44	100 130	37.5 54.4	21-23 15.2	110 78
Sugar solutions Corn syrup 86.4 Brix		60	15.6	1.459	100 180	37.8 82.2	180Mcp 1750cp	
84.4 Brix		60	15.6	1.445	100 180	37.8 82.2	48Mcp 800cp	
82.3 Brix		60	15.6	1.431	100 180	37.8 82.2	17Mcp 380cp	
80.3 Brix		60	15.6	1.418	100 180	37.8 82.2	6900cp 230cp	

78.4 Brix		60	15.6	1.405	100 180	37.8 82.2	3200cp 160cp	
Sugar solutions					70	37.8	49.7	230
Sucrose 60 Brix		60	15.6	1.29	100	82.2	18.7	92
					70	21.1	95.2	440
64 Brix		60	15.6	1.31	100	37.8	31.6	148
					70	21.1	216.4	1000
68 Brix		60	15.6	1.338	100	37.8	59.5	275
					70	21.1	595	2700
72 Brix		60	15.6	1.36	100	37.8	138.6	640
					70	21.1	1210	5500
74 Brix		60	15.6	1.376	100	37.8	238	1100
					70	21.1	2200	10000
76 Brix		60	15.6	1.39	100	37.8	440	2000
Sulphuric acid	444.6°C	68	20	1.839	68 140	20 60	14.56 7.2cp	76
100%								
95%		68	20	1.839	68	20	14.5	75
60%		68	20	1.50	68	20	4.4	41
20%		68	20	1.14				3M-8M 650-1400
Tar, coke oven		60	15.6	1.12+	70 100	21.1 37.8	600-1760 141-308	15M-300M 2M-20M
Tar, gas house		60	15.6	1.16-1.30	70 100	21.1 37.8	3300-66M 440-4400	2500 500
Tar, pine		60	15.6	1.06+	100 132	37.8 55.6	559 108.2	200-300 55-60
Tar, road-RT-2		60	15.6	1.07+	122 212	50 100	43.2-64.9 8.8-10.2	400-700 65-70
RT-4		60	15.6	1.08+	122 212	50 100	86.6-154 11.6-14.3	1M-2M 85-125
RT-6		60	15.6	1.09+	122 212	50 100	216-440 16.8-26.2	3M-8M 150-225
RT-8		60	15.6	1.13+	122 212	50 100	660-1760 31.8-48.3	20M-60M 250-400
RT-10		60	15.6	1.14+	122 212	50 100	4.4M-13.2M 53.7-86.6	114M-458M 500-800
RT-12		60	15.6	1.15+	122	50	25M-75M	

					212	100	108-173	
Toluene	231°F 110.6°C	68	20	0.866	68 140	20 60	0.68 0.38cp	185.7
Triethylene glycol		68	20	1.125	70	21.1	40	400-440 185-205
Turpentine	320°F	60	15.6	.86-.87	100 130	37.8 54.4	86.5-95.2 39.9-44.3	1425 650
Varnish, spar		60	15.6	0.9	68 100	20 37.8	313 143	
Water, distilled		60	15.6	1.00	68	20	1.0038	31
Water, fresh		60	15.6	1.0	60 130	15.6 54.4	1.13 0.55	31.5
Water, sea		60	15.6	1.03			1.15	31.5
Whale oil		60	15.6	0.925	100 130	37.8 54.4	35-39.6 19.9-23.4	163-184 97-112
Xylene-o	287°F 142.7°C	68	20	0.87	68 104	20 40	0.93 0.623cp	