

TABLE A-3
Properties of common liquids at 1 atm and 20°C (68°F)

Liquid	ρ , kg/m ³	μ , kg/(m · s)	$\bar{\nu}$, N/m*	ρ_p , N/m ²	Bulk modulus, K, N/m ²
Ammonia	608	2.20E-4	2.13E-2	9.10E+5	—
Benzene	881	6.51E-4	2.88E-2	1.01E+4	1.4E+9
Carbon tetrachloride	1590	9.67E-4	2.70E-2	1.20E+4	9.65E+8
Ethanol	789	1.20E-3	2.28E-2	5.7E+3	9.0E+8
Ethylene glycol	1117	2.14E-2	4.84E-2	1.2E+1	—
Freon 12	1327	2.62E-4	—	—	—
Gasoline	680	2.92E-4	2.16E-2	5.51E+4	9.58E+8
Glycerin	1260	1.49	6.33E-2	1.4E-2	4.34E+9
Kerosene	804	1.92E-3	2.8E-2	3.11E+3	1.6E+9
Mercury	13,550	1.56E-3	4.84E-1	1.1E-3	2.55E+10
Methanol	791	5.98E-4	2.25E-2	1.34E+4	8.3E+8
SAE 10W oil	870	1.04E-1 [†]	3.6E-2	—	1.31E+9
SAE 10W30 oil	876	1.7E-1 [†]	—	—	—
SAE 30W oil	891	2.9E-1 [†]	3.5E-2	—	1.38E+9
SAE 50W oil	902	8.6E-1 [†]	—	—	—
Water	998	1.00E-3	7.28E-2	2.34E+3	2.19E+9
Seawater (30‰)	1025	1.07E-3	7.28E-2	2.34E+3	2.33E+9

*In contact with air.

[†] Representative values. The SAE oil classifications allow a viscosity variation of up to ± 50 percent.

TABLE A-4
Properties of common gases at 1 atm and 20°C (68°F)

Gas	Molecular weight	R , m ² /(s ² · K)	ρ_g , N/m ³	μ , N · s/m ²	Specific-heat ratio
H ₂	2.016	4124	0.822	9.05E-6	1.41
He	4.003	2077	1.63	1.97E-5	1.66
H ₂ O	18.02	461	7.35	1.02E-5	1.33
Ar	39.944	208	16.3	2.24E-5	1.67
Dry air	28.97	287	11.8	1.80E-5	1.40
CO ₂	44.01	189	17.9	1.48E-5	1.30
CO	28.01	297	11.4	1.82E-5	1.40
N ₂	28.02	297	11.4	1.76E-5	1.40
O ₂	32.00	260	13.1	2.00E-5	1.40
NO	30.01	277	12.1	1.90E-5	1.40
N ₂ O	44.02	189	17.9	1.45E-5	1.31
Cl ₂	70.91	117	28.9	1.03E-5	1.34
CH ₄	16.04	518	6.54	1.34E-5	1.32