



Armstrong® Specific Heat—Specific Gravity

Table CG-33. Physical Properties of Liquids and Solids

	Liquid (L) or Solid (S)	sp gr @ 60-70°F	sp ht @ 60°F Btu/lb-°F
Acetic acid 100%	L	1.05	0.48
Acetic acid 10%	L	1.01	0.96
Acetone, 100%	L	0.78	0.514
Alcohol, ethyl, 95%	L	0.81	0.60
Alcohol, methyl, 90%	L	0.82	0.65
Aluminum	S	2.64	0.23
Ammonia, 100%	L	0.61	1.10
Ammonia, 26%	L	0.90	1.00
Aroclor	L	1.44	0.28
Asbestos board	S	0.88	0.19
Asphalt	L	1.00	0.42
Asphalt, solid	S	1.1-1.5	0.22-0.4
Benzene	L	0.84	0.41
Brickwork & Masonry	S	1.6-2.0	0.22
Brine - calcium chloride, 25%	L	1.23	0.689
Brine - sodium chloride, 25%	L	1.19	0.786
Clay, dry	S	1.9-2.4	0.224
Coal	S	1.2-1.8	0.26-0.37
Coal tars	S	1.20	0.35@40
Coke, solid	S	1.0-1.4	0.265
Copper	S	8.82	0.10
Cork	S	0.25	0.48
Cotton, cloth	S	1.50	0.32
Cottonseed oil	L	0.95	0.47
Dowtherm A	L	0.99	0.63
Dowtherm C	L	1.10	0.35-0.65
Ethylene glycol	L	1.11	0.58
Fatty acid - palmitic	L	0.85	0.653
Fatty acid - stearic	L	0.84	0.550
Fish, fresh, average	S		0.75-0.82
Fruit, fresh, average	S		0.80-0.88
Gasoline	L	0.73	0.53
Glass, Pyrex	S	2.25	0.20
Glass, wool	S	0.072	0.157
Glue, 2 parts water 1 part dry glue	L	1.09	0.89
Glycerol, 100% (glycerin)	L	1.26	0.58
Honey	L		0.34
Hydrochloric acid, 31.5% (muriatic)	L	1.15	0.60
Hydrochloric acid, 10% (muriatic)	L	1.05	0.75
Ice	S	0.90	0.50
Ice Cream	S		0.70
Lard	S	0.92	0.64
Lead	S	11.34	0.031
Leather	S	0.86-1.02	0.36
Linseed oil	L	0.93	0.44
Magnesia, 85%	L	0.208	0.27
Maple syrup	L		0.48
Meat, fresh, average	S		0.780
Milk	L	1.03	0.90-0.93
Nickel	S	8.90	0.11
Nitric acid, 95%	L	1.50	0.50
Nitric acid, 60%	L	1.37	0.64
Nitric acid, 10%	L	1.05	0.90
No. 1 Fuel Oil (kerosene)	L	0.81	0.47
No. 2 Fuel Oil	L	0.86	0.44
No. 3 Fuel Oil	L	0.88	0.43
No. 4 Fuel Oil	L	0.90	0.42
No. 5 Fuel Oil	L	0.93	0.41
No. 6 Fuel Oil	L	0.95	0.40

Table CG-33. (cont.) Physical Properties of Liquids and Solids

	Liquid (L) or Solid (S)	sp gr @ 60-70°F	sp ht @ 60°F Btu/lb-°F
API Mid-continent crude	L	.085	0.44
API gas oil	L	0.88	0.42
Paper	S	1.7-1.15	0.45
Paraffin	S	0.86-0.91	0.62
Paraffin, melted	L	0.90	0.69
Phenol (carbolic acid)	L	1.07	0.56
Phosphoric acid, 20%	L	1.11	0.85
Phosphoric acid, 10%	L	1.05	0.93
Phthalic anhydride	L	1.53	0.232
Rubber, vulcanized	S	1.10	0.415
SAE - SW (#8 machine lube oil)	L	0.88	
SAE - 20 (#20 machine lube oil)	L	0.89	
SAE - 30 (#30 machine lube oil)	L	0.89	
Sand	S	1.4-1.76	0.19
Sea water	L	1.03	0.94
Silk	S	1.25-1.35	0.33
Sodium hydroxide, 50% (caustic acid)	L	1.53	0.78
Sodium hydroxide, 30%	L	1.33	0.84
Soybean oil	L	0.92	0.24-0.33
Steel, mild @ 70	S	7.90	0.11
Steel, stainless, 300 series	S	8.04	0.12
Sucrose, 60% sugar syrup	L	1.29	0.74
Sucrose, 40% sugar syrup	L	1.18	0.66
Sugar, cane & beet	S	1.66	0.30
Sulfur	S	2.00	0.203
Sulfuric acid, 110% (fuming)	L		0.27
Sulfuric acid, 98%	L	1.84	0.35
Sulfuric acid, 60%	L	1.50	0.52
Sulfuric acid, 20%	L	1.14	0.84
Titanium (commercial)	S	4.50	0.13
Toluene	L	0.86	0.42
Trichloroethylene	L	1.62	0.215
Tetrachloride carbon	L	1.58	0.21
Turpentine, spirits of	L	0.86	0.42
Vegetables, fresh, average	S		0.73-0.94
Water	L	1.00	1.00
Wines, table, dessert, average	L	1.03	0.90
Woods, vary from	S	0.35-0.9	0.90
Wool	S	1.32	0.325
Zinc	S	7.05	0.095

Table CG-34. Physical Properties of Gases

	sp gr @ 60-70°F	sp ht @ 60°F Btu/lb-°F
Air	1.00	0.24
Ammonia	0.60	0.54
Benzene		0.325
Butane	2.00	0.455
Carbon dioxide	1.50	0.21
Carbon monoxide	0.97	0.255
Chlorine	2.50	0.118
Ethane	1.10	0.50
Ethylene	0.97	0.45
Freon - 12		0.16
Hydrogen	0.069	3.42
Hydrogen sulfide	1.20	0.25
Methane	0.55	0.60
Nitrogen	0.97	0.253
Oxygen	1.10	0.225
Propane	1.50	0.46
Sulfur dioxide		0.162
Water vapor (steam)	2.30	0.453