



Properties of Liquids

Applications Guide

Reference Data Properties of Liquids—Ref. 135

Physical Properties of Solids, Liquids and Gases

Continued

Substance	*Density lbs./ft ³	Specific Heat Btu lb.-°F	*Thermal Conductivity Btu-in hr.-ft ² -°F	Boiling Point °F	Heat of Vaporization Btu/lb.
Acetic Acid, 100%	65.4	0.48	1.14	245	175
Acetone, 100%	49.0	0.514	1.15	133	225
Allyl Alcohol	55.0	0.665		207	293
Ammonia, 100%	47.9	1.1	3.48	-27	589
Amyl Alcohol	55.0	0.65		280	216
Aniline	64.6	0.514	1.25	63	198
Arochlor Oil	89.7	0.28		650	
Brine-Calcium Chloride, 25%	76.6	0.689	3.36		
Brine-Sodium Chloride, 25%	74.1	0.786	2.88	220	730
Butyl Alcohol	45.3	0.687		244	254
Butyric Acid	50.4	0.515		345	
Carbon Tetrachloride	98.5	0.21		170	
Corn Syrup, Dextrose	87.8	0.65±		231	
Cottonseed Oil	59.2	0.47	1.2		
Ether	46.0	0.503	0.95	95	160
Ethyl Acetate	51.5	0.475		180	183.5
Ethyl Alcohol, 95%	50.4	0.60	1.3		370
Ethyl Bromide	90.5	0.215		101	108
Ethyl Chloride	57.0	0.367		54	166.5
Ethyl Iodide	113.0	0.161		160	81.3
Ethylene Bromide	120.0	0.172		270	83
Ethylene Chloride	71.7	0.299		240	139
Ethylene Glycol	70.0	0.555		387	
Fatty Acid-Aleic	55.4	0.7±	1.1	547	
Fatty Acid-Palmitic	53.1	0.653	0.996	520	
Fatty Acid-Stearic	52.8	0.550	0.936	721	
Fish, Fresh, Average	55-65	0.76			
Formic Acid	69.2	0.525		213	216
Freon 11	92.1	0.208	0.600	74.9	
Freon 12	81.8	0.232	0.492	-21.6	62
Freon 22	74.53	0.300	0.624	-41.36	
Fruit, Fresh, Average	50-60	0.88			
Glycerine	78.7	0.58	1.97	556	
Heptane	38.2	0.49		210	137.1
Hexane	38.2	0.6		155	142.5

CONTINUED

* At or near room temperature.

** Average value shown. Boils at various temperatures within the distillation range for the material. Verify exact value from application originator.

To convert to kg/m³ multiply lb/ft³ by 16.02

To convert to kJ/kg multiply Btu/lb by 2.326

To convert to kJ/kg-°C multiply Btu/lb-°F by 4.187

To convert to W/m-°C multiply Btu-in/hr-ft²-°F by 0.1442

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Physical Properties of Solids, Liquids and Gases

Continued

Substance	*Density lbs./ft ³	Specific Heat Btu lb.-°F	*Thermal Conductivity Btu-in hr.-ft ² -°F	Boiling Point °F	Heat of Vaporization Btu/lb.
Honey		0.34			
Hydrochloric Acid, 10%	66.5	0.93		221	
Ice	56	0.5	3.96		
Ice Cream		0.70			
Lard	57.4	0.64			
Linseed Oil	57.9	0.44		552	
Maple Syrup		0.48			
Meat, Fresh, Average	90±	0.70			
Mercury	845	0.033	59.64	675	117
Methyl Acetate	54.8	0.47		133	176.5
Methyl Chloroform	82.7	0.26		165	95
Methylene Chloride	82.6	0.288		104	142
Milk, 3.5%	64.2	0.90			
Molasses	87.4	0.60		220±	
Nitric Acid, 7%	64.7	0.92		220	918
Nitric Acid, 95%	93.5	0.5		187	207
Nitrobenzene		0.35		412	142.2
Olive Oil	58	0.47		570	
Perchloroethylene	101.3	0.21		250	90
Petroleum Products:					
Asphalt	62.3	0.42	5.04		
Benzene	56	0.42	1.04	175	170
Fuel Oils:					
Fuel Oil #1 (Kerosene)	50.5	0.47	1.008	**440±	86
Fuel Oil #2	53.9	0.44	0.96		
Fuel Oil Medium #3, #4	55.7	0.425	0.918	**580±	67
Fuel Oil Heavy #5, #6	58.9	0.41	0.852		
Gasoline	41-43	0.53	0.936	**280±	116
Machine/Lube Oils:					
SAE 10-30	55.4	0.43			
SAE 40-50	55.4	0.43			
Naphthalene	54.1	0.396		424±	103
Paraffin, Melted (150°F+)	56	0.69	1.68	572	70
Propane (Compressed)	0.13	0.576	1.81	-48.1	
Toluene	53.7	0.42	1.032		
Transformer Oils	56.3	0.42	0.9		
Phenol (Carbolic Acid)	66.6	0.56		346	
Phosphoric Acid, 10%	65.4	0.93			
Phosphoric Acid, 20%	69.1	0.85			

Reference Data

CONTINUED

* At or near room temperature.
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Substance	*Density lbs./ft ³	Specific Heat Btu lb.-°F	*Thermal Conductivity Btu-in hr.-ft ² -°F	Boiling Point °F	Heat of Vaporization Btu/lb.
Polyurethane Foam Components (MDI System):					
Part A Isocyanate	77	0.6	1.14		
Part B Polyol Resin	74.8	0.7	1.32		
Potassium (1000°F)	44.6	0.18	260.40	1400	893
Propionic Acid	61.8	0.56		286	177.8
Propyl Alcohol	50.2	0.57		208	295.2
Sea Water	64.2	0.94			
Sodium (1000°F)	51.2	0.30	580	1638	1810
Sodium Hydroxide (Caustic Soda)					
30% Sol.	82.9	0.84			
50% Sol.	95.4	0.78			
Soybean Oil	57.4	0.24-0.33			
Starch	95.4				
Sucrose, 40% Sugar Syrup	73.5	0.66		214	
Sucrose, 60% Sugar Syrup	80.4	0.74		218	
Sulfur, Melted (500°F)	112	0.24		832	120
Sulfuric Acid, 20%	71	0.84		218	
Sulfuric Acid, 60%	93.5	0.52	2.88	282	
Sulfuric Acid, 98%	114.7	0.35	1.8	625	219
Trichloroethylene	91.3	0.23	0.84	188	103
Trichloro-Trifluoroethane	94.6	0.21		118	63
Turpentine	54	0.42		319	133
Vegetable Oil	57.5	0.43			
Vegetables, Fresh, Average	50-60	0.92			
Water	62.4	1.00	4.08	212	965
Wines, Table & Dessert, Average	64.2	0.90			
Xylene	53.8	0.411		288	149.2

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