

SAFETY ENGINEERING TABLES

TABLE 45-R
APPROXIMATE SPECIFIC GRAVITIES AND DENSITIES
(At room temperature with reference to water at 39 F)

Substance	Specific gravity	Avg density, lb per cu ft	Substance	Specific gravity	Avg density, lb per cu ft
Metals, Alloys, Ores			Timber, air-dry		
Aluminum, cast-hammered	2.55-2.80	165	Apple	0.66-0.74	44
Aluminum, bronze	7.7	481	Ash, black	0.55	34
Brass, cast-rolled	8.4-8.7	534	Ash, white	0.64-0.71	42
Bronze, 7.9 to 14% Sn	7.4-8.9	509	Birch, sweet, yellow .. .	0.71-0.72	44
Bronze, phosphor .. .	8.88	554	Cedar, white, red .. .	0.35	22
Copper, cast-rolled	8.8-8.95	558	Cherry, wild red .. .	0.43	27
Copper ore, pyrites ..	4.1-4.3	262	Chestnut	0.43	30
German silver	9.53	588	Cypress	0.45-0.48	29
Gold, cast-hammered ..	19.25-19.85	1205	Pir, Douglas	0.48-0.55	32
Gold coin (U.S.) .. .	17.15-17.8	1073	Pir, balsam	0.40	25
Iridium	21.75-22.42	1383	Elm, white	0.56	35
Iron, gray cast	7.09-7.13	443	Hemlock	0.45-0.50	29
Iron, cast, pig	7.2	450	Hickory	0.74-0.80	43
Iron, wrought	7.6-7.9	485	Locust	0.67-0.77	45
Iron, spiegeleisen .. .	7.5	468	Mahogany	0.56-0.85	44
Iron, ferroalicon .. .	6.7-7.8	427	Maple, sugar	0.68	43
Iron ore, hematite .. .	5.2	325	Maple, white	0.53	33
Iron ore, limonite .. .	3.6-4.0	237	Oak, chestnut	0.74	46
Iron ore, magnetite .. .	4.9-5.2	315	Oak, live	0.87	54
Iron slag	2.5-3.0	172	Oak, red, black .. .	0.64-0.71	42
Lead	11.34	710	Oak, white	0.77	48
Lead ore, galena .. .	7.2-7.6	465	Pine, Oregon	0.51	32
Manganese	7.43	475	Pine, red	0.48	30
Manganese ore, pyrolusite	8.7-4.6	259	Pine, white	0.43	27
Mercury	13.546	847	Pine, Southern .. .	0.61-0.67	39-42
Monel metal, rolled ..	8.97	558	Pine, Norway .. .	0.55	34
Nickel	8.9	557	Poplar	0.43	27
Platinum, cast-hammered	21.5	1380	Redwood, California ..	0.42	26
Silver, cast-hammered	10.4-10.6	656	Spruce, white, red .. .	0.45	28
Steel, cold-drawn .. .	7.83	489	Teak, African	0.99	62
Steel, machine	7.80	487	Teak, Indian	0.66-0.88	43
Steel, tool	7.70-7.78	481	Walnut, black	0.59	37
Tin, cast-hammered ..	7.2-7.5	459	Willow	0.42-0.50	28
Tin ore, cassiterite ..	6.4-7.0	418			
Tungsten	19.25	1200			
Zinc, cast-rolled .. .	6.9-7.2	440			
Zinc, ore, blende .. .	3.9-4.2	253			
Various Solids			Various Liquids		
Cereals, oats, bulk ..	0.41	26	Alcohol, ethyl (100%) ..	0.789	49
Cereals, barley, bulk ..	0.62	39	Alcohol, methyl (100%) ..	0.798	50
Cereals, corn, rye, bulk	0.78	48	Acid, muriatic (HCl), 40%	1.20	75
Cereals, wheat, bulk ..	0.77	48	Acid, nitric, 91% .. .	1.50	94
Cork	0.22-0.26	15	Acid, sulfuric, 37% .. .	1.50	112
Cotton, flax, hemp .. .	1.47-1.50	93	Chloroform	1.500	95
Fats	0.90-0.97	53	Ether	0.755	46
Flour, loose	0.40-0.50	25	Lye, soda, 68% .. .	1.70	106
Flour, pressed	0.70-0.80	47	Oil, vegetable	0.91-0.94	56
Glass, common	2.40-2.60	152	Oil, mineral, lubricants	0.88-0.94	57
Glass, plate or crown ..	2.45-2.72	151	Turpentine	0.861-0.887	54
Glass, crystal	2.90-3.00	184	Water, 4 C, max. density	1.0	62 428
Glass, flint	3.2-4.7	247	Water, 100 C	0.9584	59 830
Hay and straw, bales ..	0.82	20	Water, ice	0.88-0.92	56
Leather	0.88-1.02	59	Water, snow, fresh fallen	0.125	8
Paper	0.70-1.15	58	Water, sea water .. .	1.02-1.03	64
Potatoes, piled	0.67	44			
Rubber, Caoutchouc .. .	0.92-0.98	59	Ashlar Masonry		
Rubber goods	1.0-2.0	64	Granite, syenite, gneiss	2.4-2.7	159
Salt, granulated, piled ..	0.77	48	Limestone	2.1-2.3	153
Salt peter	2.11	132	Marble	2.4-2.8	162
Starch	1.53	98	Sandstone	2.0-2.6	143
Sulfur	1.93-2.07	125	Bluestone	2.3-2.6	158
Wool	1.32	82			
			Rubble Masonry		
			Granite, syenite, gneiss....	2.3-2.6	153