

Acoustic Properties of Materials

Material	V_{Long} (m/s)	V_{Trans} (m/s)	Density - ρ (kg/m³) $\times 10^3$	Aco. Imp. - Z (kg/m².s) $\times 10^6$
Air (20 °C)	344	-	0.0012	0.000413
Aluminum	6320	3130	2.7	17
Brass	4430	2120	8.1	35.9
Cadmium	2780	1500	8.6	23.9
Iron, Cast (Soft)	3500	2200	7.15	25
Iron, Cast (Hard)	5600	3200	7.15	40
Concrete	5250	3429	2.3	12.1
Copper	4700	2260	8.9	41.8
Glass	4260	2560	3.6	15.3
Glycerin	1920	-	1.3	2.5
Gold	3240	1200	19.3	62.5
Grey Cast Iron	4600	2650	7.2	33.1
Human Tissue	1470	-	1.07	1.58
Lead	2160	700	11.4	24.6
Magnesium	5770	3050	1.7	9.8
Motor oil (SAE 20-30)	1740	-	0.87	1.5
Nickel	5630	2960	8.88	50
Perspex (plexi-glass)	2730	1430	1.18	3.2
Platinum	3960	1670	21.4	84.7
Polyamide (nylon)	2620	1080	1.1	2.85
Polyethylene	2340	925	0.94	2.2
Polyvinylchloride (PVC, hard)	2395	1060	1.4	3.35
Porcelain	5600	3500	2.4	13.4
Quartz Glass	5570	3515	2.6	14.5
Rubber (Natural)	1549	-	1.12	1.74
Rubber (Silicone)	940	-	1.49	1.4
Sapphire	11913	3899	3.98	47.2
Silver	3600	1590	10.5	37.8
Stainless Steel, Cres 302	5660	3120	8.03	45.45
Stainless Steel, Cres 410	5390	2990	7.67	41.35
Steel, 1020	5890	3240	7.7	45.4
Steel, 4340	5850	3190	7.8	45.6
Steel (low Alloy)	5940	3250	7.85	46.6
Steel (Calibration block)	5920	3250	7.85	46.5
Tin	3320	1670	7.3	24.2
Titanium	6230	3180	4.54	28.3
Tungsten	5180	2870	19.25	99.7
Water (20 °C)	1480	-	1	1.48
Zinc	4170	2410	7.1	29.6