

REFRACTION INDEX OF VARIOUS SUBSTANCES FOR 3D MODELERS

I suggest that you print this list out, so you can easily refer to it whenever you need it.

Note: I'm an artist, not a scientist. I have collected this list from various places on the web, and in various books; but I cannot tell you the RI of anything not on the list, nor can I vouch for the accuracy of any of the items in this list.

Gemstones

Agate 1.544 - 1.553	Garnet, Grossular 1.72 - 1.80	Pearl 1.53 - 1.69
Alexandrite 1.746 - 1.755	Garnet, Andradite 1.88 - 1.94	Peridot 1.635 - 1.690
Almandine 1.75 - 1.83	Garnet, Demantoid 1.880 - 1.9	Quartz 1.544 - 1.553
Amber 1.539 - 1.545	Garnet, Mandarin 1.790 - 1.8	Ruby 1.757 - 1.779
Amethyst 1.532 - 1.554	Garnet, Pyrope 1.73 - 1.76	Sapphire 1.757 - 1.779
Ammolite 1.52 - 1.68	Garnet, Rhodolite 1.740 - 1.770	Sapphire, Star 1.760 - 1.773
Andalusite 1.629 - 1.650	Garnet, Tsavorite 1.739 - 1.744	Spessarite 1.79 - 1.81
Apatite 1.632 - 1.42	Garnet, Uvarovite 1.74 - 1.87	Spinel 1.712 - 1.717
Aquamarine 1.567-1.590	Hauyn 1.490 - 1.505	Spinel, Blue 1.712 - 1.747
Axenite 1.674 - 1.704	Iolite 1.522 - 1.578	Spinel, Red 1.708 - 1.735
Beryl 1.57 - 1.60	Jade, Jadeite 1.64 - 1.667	Star Ruby 1.76 - 1.773
Beryl, Red 1.570 - 1.598	Jade, Nephrite 1.600 - 1.641	Tanzanite 1.690-1.7
Chalcedony 1.544 - 1.553	Jet 1.660	Tanzanite 1.692 - 1.700
Chrome Tourmaline, 1.61 - 1.64	Kunzite 1.660 - 1.676	Topaz 1.607 - 1.627
Citrine 1.532 - 1.554	Labradorite 1.560 - 1.572	Topaz, Imperial 1.605-1.640
Clinohumite 1.625 - 1.675	Lapis Lazuli 1.50 - 1.55	Tourmaline 1.603 - 1.655
Coral 1.486 - 1.658	Moonstone 1.518 - 1.526	Tourmaline, Blue 1.61 - 1.64
Crystal 2.000	Morganite 1.585 - 1.594	Tourmaline, Catseye 1.61 - 1.64
Crysoberyl, Catseye 1.746 - 1.755	Obsidian 1.50	Tourmaline, Green 1.61 - 1.64
Danburite 1.627 - 1.641	Opal, Black 1.440 - 1.460	Tourmaline, Paraiba 1.61 - 1.65
Diamond 2.417	Opal, Fire 1.430 - 1.460	Tourmaline, Red 1.61 - 1.64
Emerald 1.560 - 1.605	Opal, White 1.440 - 1.460	Zircon 1.777 - 1.987
Emerald Catseye 1.560 - 1.605	Oregon Sunstone 1.560 - 1.572	Zirconia, Cubic 2.173 - 2.21
Flourite 1.434	Padparadja 1.760 - 1.773	

Metals

Aluminum 1.39	Mylar 1.65	Silver 1.35
Copper 2.43	Nickel 1.08	Titanium 2.16
Gold 0.166	Platinum 2.33	

Common Liquids

Acetone 1.36	Honey, 21% water content 1.484	Shampoo 1.362
Alcohol, Ethyl (grain) 1.36	Ice 1.309	Sugar Solution 30% 1.38
Alcohol, Methyl (wood) 1.329	Milk 1.35	Sugar Solution 80% 1.49
Beer 1.345	Oil, Clove 1.535	Turpentine 1.472
Carbonated Beverages 1.34 - 1.356	Oil, Lemon 1.481	Vodka 1.363
Fruit Juice	Oil, Neroli 1.482	Water (0° C) 1.33346
Chlorine (liq) 1.385	Oil, Orange 1.473	Water (100° C) 1.31766
Cranberry Juice (25%) 1.351	Oil, Safflower 1.466	Water (20° C) 1.33283
Glycerin 1.473	Oil, vegetable (50° C) 1.47	Whisky 1.356
Honey, 13% water content 1.504	Oil of Wintergreen 1.536	
Honey, 17% water content 1.494	Rum, White 1.361	

Common Transparent Materials

Eye, Aqueous humor 1.33	Glass, Flint, 29% lead 1.569	Nylon 1.53
Eye, Cornea 1.38	Glass, Flint, 55% lead 1.669	Obsidian 1.50
Eye, Lens 1.41	Glass, Flint, 71% lead 1.805	Plastic 1.460 - 1.55
Eye, Vitreous humor 1.34	Glass, Fused Silica 1.459	Plexiglas 1.488
Glass, Arsenic Trisulfide 2.04	Glass, Pyrex 1.474	Salt 1.516
Glass, Crown (common) 1.52	Lucite 1.495	

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