

Appendix Radiation Rates

Material		Radiation rate	Material	Radiation rate
Metal	Aluminum		Iron oxide	0.78 to 0.82
	Pure aluminum and highly shiny aluminum	0.04 to 0.06	Red rusty iron	0.69
	Aluminum oxide (600°C)	0.76	Lead oxidized and turned gray	0.28
	Aluminum plate sold at stores	0.09	Mercury	0.09 to 0.12
	Brass		Molybdenum filament	0.10 to 0.20
	Pure brass and highly shiny brass plate	0.10	Nickel	
	Brass oxide (600°C)	0.56 to 0.64	Shiny nickel Nickel oxide plate (600°C)	0.07
	Shiny chrome	0.08 to 0.36	Nickel oxide	0.90
	Chrome oxide	0.81	Platinum	
	Copper		Shiny platinum plate	0.05 to 0.10
	Shiny copper	0.05	Platinum wire	0.07 to 0.18
	Heated at 600°C	0.78	Shiny silver	0.03 to 0.28
	Uneven bronze surface	0.55	Stainless steel	
	Shiny pure gold	0.02 to 0.03	Shiny stainless steel	0.07
	Iron and steel (except stainless steel)		SUS310 oxidized in oven	0.45
	Shiny iron	0.14 to 0.38	Shiny tin	0.06
	Shiny cast iron	0.21	Aged Tungsten filament	0.03 to 0.35
	Shiny cast iron Cast iron oxide (600°C)	0.28	Zinc	
	Shiny cast iron Cloudy cast iron oxide	0.94	Commercially available shiny pure zinc	0.05
	Rusty iron plate	0.69	Galvanized sheet	0.21
	Shiny steel Steel oxide (600°C)	0.07	Zinc oxide	0.11 to 0.28
	Thin steel plate and roll	0.06	Titanium oxide	0.40 to 0.60
	Unpolished steel plate	0.94 to 0.97		

Material		Radiation rate	Material	Radiation rate
Non-Metal	Asbestos	0.93 to 0.94	Water	0.92 to 0.96
	Brick		Ice	0.96 to 0.98
	Red, unpolished	0.93	Snow	0.83
	Fire clay	0.75	Opaque quartz	0.85 to 0.95
	Carbon		Ceramics	0.90 to 0.94
	Filament	0.53	Marble	0.94
	Soot and carbon film	0.84 to 0.95	Phosphate	0.30 to 0.40
	Paint, lacquer, and varnish		Gypsum	0.80 to 0.90
	Lacquer	0.80 to 0.95	Mortar	0.89 to 0.91
	White enamel	0.91	Red brick	0.93 to 0.95
	Black lacquer	0.96 to 0.98	Fiber	0.90
	Aluminum paint	0.27 to 0.67	Black cloth	0.98
	Oil paint in 16 colors	0.92 to 0.96	Human skin	0.98
	Glass (Pyrex, lead, and sodium)	0.92	Lather	0.75 to 0.80
	Shiny yellowish white marble	0.68 to 0.92	Charcoal powder	0.96
	Asphalt	0.90 to 0.98	Black rubber	0.94
	Concrete	0.94	Plastic	0.85 to 0.95
	Cement	0.96	Lumber	0.90
	Sand	0.90	Paper	0.70 to 0.94
	Earth	0.92 to 0.96		