

# Young's Durability Scale

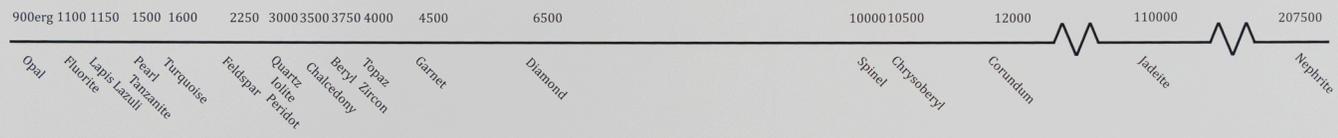
A Probabalistic Elemental Scale for Rating the Durability of Jewelry Quality Gemstones

*"The degree of hardness, however, cannot be the sole determinant of a mineral's resistance to wear or destruction." - Friedrich Mohs, 1870*

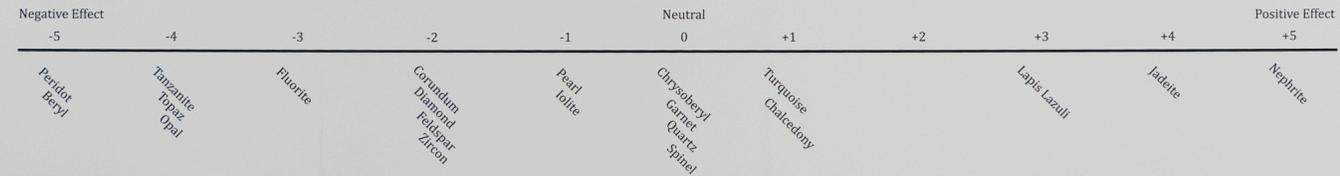
## Element One: Hardness



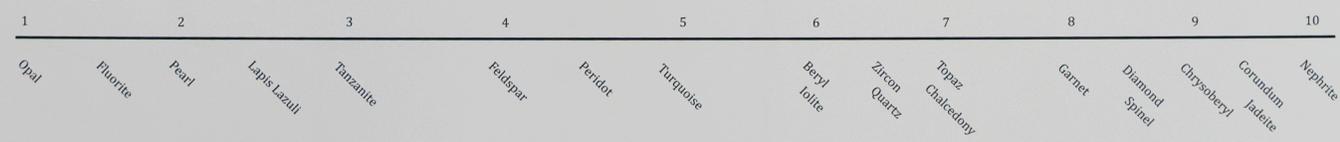
## Element Two: Fracture Toughness



## Element Three: Inclusions



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Durability is ranked with the influence of:  
45% fracture toughness  
35% mohs hardness  
20% inclusions



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Mineral	Fracture Toughness (MPa·m <sup>1/2</sup> )	Fracture Toughness (ksi·in <sup>1/2</sup> )	Comments/Notes
Amethyst	10.000	10.000	See Mohs, 1870, p. 107
Apatite	10.000	10.000	See Mohs, 1870, p. 107
Calcite	10.000	10.000	See Mohs, 1870, p. 107
Chalcedony	10.000	10.000	See Mohs, 1870, p. 107
Chrysoberyl	10.000	10.000	See Mohs, 1870, p. 107
Corundum	10.000	10.000	See Mohs, 1870, p. 107
Diamond	10.000	10.000	See Mohs, 1870, p. 107
Feldspar	10.000	10.000	See Mohs, 1870, p. 107
Garnet	10.000	10.000	See Mohs, 1870, p. 107
Quartz	10.000	10.000	See Mohs, 1870, p. 107
Spinel	10.000	10.000	See Mohs, 1870, p. 107
Topaz	10.000	10.000	See Mohs, 1870, p. 107
Tanzanite	10.000	10.000	See Mohs, 1870, p. 107
Turquoise	10.000	10.000	See Mohs, 1870, p. 107
Zircon	10.000	10.000	See Mohs, 1870, p. 107

Clarity	Description	Features
FL	Flawless	No inclusions or blemishes visible under 10x magnification.
VFL	Very Fine Lines	High clarity, no inclusions or blemishes visible under 10x magnification.
VVS	Very Very Slight Inclusions	High clarity, no inclusions or blemishes visible under 10x magnification.
VSL	Very Slight Inclusions	High clarity, no inclusions or blemishes visible under 10x magnification.
S1	Slight Inclusions	High clarity, no inclusions or blemishes visible under 10x magnification.
S2	Slight Inclusions	High clarity, no inclusions or blemishes visible under 10x magnification.
S3	Slight Inclusions	High clarity, no inclusions or blemishes visible under 10x magnification.
S4	Slight Inclusions	High clarity, no inclusions or blemishes visible under 10x magnification.
S5	Slight Inclusions	High clarity, no inclusions or blemishes visible under 10x magnification.
S6	Slight Inclusions	High clarity, no inclusions or blemishes visible under 10x magnification.
S7	Slight Inclusions	High clarity, no inclusions or blemishes visible under 10x magnification.
S8	Slight Inclusions	High clarity, no inclusions or blemishes visible under 10x magnification.
S9	Slight Inclusions	High clarity, no inclusions or blemishes visible under 10x magnification.
S10	Slight Inclusions	High clarity, no inclusions or blemishes visible under 10x magnification.
S11	Slight Inclusions	High clarity, no inclusions or blemishes visible under 10x magnification.
S12	Slight Inclusions	High clarity, no inclusions or blemishes visible under 10x magnification.
S13	Slight Inclusions	High clarity, no inclusions or blemishes visible under 10x magnification.
S14	Slight Inclusions	High clarity, no inclusions or blemishes visible under 10x magnification.
S15	Slight Inclusions	High clarity, no inclusions or blemishes visible under 10x magnification.
S16	Slight Inclusions	High clarity, no inclusions or blemishes visible under 10x magnification.
S17	Slight Inclusions	High clarity, no inclusions or blemishes visible under 10x magnification.
S18	Slight Inclusions	High clarity, no inclusions or blemishes visible under 10x magnification.
S19	Slight Inclusions	High clarity, no inclusions or blemishes visible under 10x magnification.
S20	Slight Inclusions	High clarity, no inclusions or blemishes visible under 10x magnification.

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