

**DIAMOND COLOR GRADING SCALE COMPARISON**

<b>SYSTEMS &amp; INSTITUTIONS</b>												
<b>GENERAL DESCRIPTION</b>	Colorless			Near Colorless			Slightly Tinted					Very Light Yellow
Traditional Terms	Jager	River		Top Wesselton	Wesselton	Top Crystal	Crystal	Top Cape	Cape	Low Cape	Light Yellow	
United Kingdom (Old)	Blue White	Top Fine White		Fine White		White	Commercial White	Crystal		Top Cape		Cape
CIBJO	Exceptional White			Rare White	White	Slightly Tinted White	Tinted White			Slightly Yellowish	Yellowish	
Switzerland	River		Top Wesselton	Wesselton		Top Crystal	Crystal		Top Cape		Cape	
United Kingdom	Finest White			Fine White		White	Commercial White	Top Silver Cape		Silver Cape		Light Cape
Gemological Institute of America	D	E	F	G	H	I	J	K	L	M	N	
Antwerp	0+	0	1+	1	2	3	4	5	6	7	8	9
South Africa	0		1		1.5	2	3	4	5	6	7	8
AGS	0		1		2	3	4	5		6	7	
Colorimeter	0.25	0.75	1.25	2.25	2.75		3.25	3.75	4.25	4.75	5.25	
Hong Kong	100	99	98 - 97		96	95	94	93	92	91	90	89

<b>GIA</b>	<b>D E F</b>	<b>G H I J</b>	<b>K L M</b>	<b>N O P Q R</b>	<b>S T U V W X Y Z</b>
<b>color grading scale</b>	colorless	nearly colorless	faint yellow	very light yellow	light yellow to strong yellow



**DIAMOND CLARITY GRADING SCALE CONVERSION**

GEMOLOGICAL INSTITUTE OF AMERICA	FL	IF	VVS 1	VVS 2	VS 1	VS 2	SI 1	SI 2	I 1	I 2	I 3
CIBJO	FL	IF	VVS		VS		SI	PIQUE 1	PIQUE 2	PIQUE 3	
TRANSLATION	FLAWLESS	INTERNALLY FLAWLESS	VERY VERY SMALL INCLUSIONS		VERY SMALL INCLUSIONS		SMALL INCLUSIONS		INCLUSIONS		
DESCRIPTION	No inclusions with 10X magnification		Very difficult to see inclusions with 10X magnification		Difficult to see inclusions with 10X magnification		Small inclusions can be seen but do not interfere		Inclusions begin to interfere with transparency and durability		



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**Diamond Simulants - Gemological Properties**

<b>Material</b>	Refractive Index	Doubling Yes \ No	Dispersion	Hardness (Mohs')	Density (g/cm <sup>3</sup> )	Ultraviolet Reaction	Thermal Conductivity	Market Introduction
Diamond	2.417	N	0.044	10	3.52	None to Strong	Excellent	1476 -
<b>Artificial Simulants:</b>								
Glasses	1.47 - 1.7	N	> 0.098	< 6	2.4 - 4.2	Variable	Poor	1700 -
Cubic Zirconia	2.15 - 2.2	N	0.06	8.3 - 8.5	5.7 - 5.8	None to Strong	Poor	1976 -
GGG	1.97	N	0.045	6.5 - 7	7.02 - 7.05	None to Strong	Poor	1973-1975
Strontium titanate	2.41	N	0.19	5.5	5.13	None	Poor	1955-1970
Syn. Moissanite	2.648 - 2.691	Y	0.104	8.5-9.25	3.22	None to Weak	High	1998 -
Syn. Rutile	2.62 - 2.9	Y	0.33	6 - 6.5	4.25	None	Poor	1947-1955
Syn. Sapphire	1.762 - 1.770	Y	0.018	9	3.97 - 4	None to Weak	Poor	1900-1947
Syn, Spinel	1.727	N	0.02	8	3.6 - 3.64	None to Strong	Poor	1920-1947
YAG	1.83	N	0.028	8.25	4.55 - 4.65	None to Moderate	Poor	1970-1975



### Diamond Size Estimations for Various Weights for Fancy Cuts

		Fancy Cuts - Millimeters (mm)						
		Marquise	Emerald	Pear	Oval	Princess	Heart (Width)	Round
C T  W E I G H T	<b>0.20</b>	5.0 x 2.0	4.0 x 3.0	4.0 x 2.0	4.0 x 3.0	3.15	3.80	3.85
	<b>0.25</b>	5.5 x 2.5	4.5 x 3.0	4.3 x 2.5	5.0 x 3.0	3.40	4.00	4.10
	<b>0.50</b>	8.0 x 4.0	5.5 x 3.5	6.0 x 4.0	6.0 x 4.0	4.40	5.00	5.20
	<b>0.75</b>	9.0 x 4.5	6.5 x 4.5	7.0 x 5.0	6.75 x 5.0	4.90	5.80	5.90
	<b>1.00</b>	10.0 x 4.75	7.0 x 5.0	8.0 x 5.5	7.25 x 5.5	5.50	6.50	6.50
	<b>1.25</b>	10.5 x 5.0	7.5 x 5.5	8.5 x 5.75	7.75 x 6.0	6.00	6.75	7.00
	<b>1.50</b>	11.0 x 5.2	8.0 x 6.0	9.0 x 6.0	8.25 x 6.5	6.50	7.25	7.40
	<b>2.00</b>	12.0 x 6.0	8.5 x 6.5	10.0 x 6.5	8.75 x 7.5	7.50	8.00	8.20
	<b>2.50</b>	13.0 x 6.5	9.0 x 7.0	11.0 x 7.0	9.0 x 7.75	8.00	8.50	9.00
	<b>3.00</b>	14.0 x 7.0	10.0 x 8.0	12.0 x 8.0	10.0 x 8.0	8.30	9.00	9.40
<b>4.00</b>	16.0 x 8.0	11.0 x 9.0	14.0 x 9.0	11.0 x 9.0	9.00	10.00	10.20	
<b>5.00</b>	17.0 x 9.0	12.0 x 10.0	15.0 x 9.5	12.0 x 10.0	9.50	11.00	11.00	



Sieve No.	Approximate pieces p\ct	Carats	Approximate size (mm)
000	375	0.0025	0.80
00	265 / 275	0.0033	0.90
0	200	0.005	1.10
1	175 / 180		1.15
1.5	150		1.20
2	125 / 130		1.25
2.5	110 / 115		1.30
3	100	0.01	1.35
3.5	90		1.40
4	75 / 80		1.45
4.5	70		1.50
5	60		1.55
5.5	50	0.02	1.60
6	48		1.70
6.5	45		1.80
7	35 / 40		1.90
7.5	33	0.03	2.00
8	30		2.10
8.5	25	0.04	2.20
9	22		2.30
9.5	20	0.05	2.40
10	18		2.50
10.5	17	0.06	2.60
11	16	0.06 to 0.07	2.70
11.5	15		2.80
12	13	0.07 to 0.08	2.90
12.5	11	0.09	3.00
13	10	0.10	3.10
13.5	9	0.11	3.20
14	8	0.12	3.30
14.5	7.5	0.13	3.40
15	6.5	0.15	3.50
15.5	6	0.17	3.60
16	5.5	0.18	3.70
16.5	5.25	0.19	3.80
17	4.75	0.21	3.90
17.5	4.50	0.22	4.00
18	4.25	0.23	4.10
18.5	4	0.25	4.20
19	3.7	0.27	4.30
19.5	3.33	0.30	4.40
20	3	0.33	4.50

