

**Gems & Gemology Data Depository:** Degree of defect deformation in natural, synthetic, and treated diamond samples.

Sample no.	Shape <sup>a</sup>	Weight (ct)	Color	Sample type	Diamond type	Crystal face ⊥ X-ray beam	Degree of defect deformation
1	RB	0.24	Yellow	Natural	IaA+IaB	[111]	Moderate
2	RB	0.13	Light green	Natural	IaA	[110]	Strong
3	RB	0.43	Light pink	Natural	IaA+IaB	[110]	Strong
4	RB	0.16	Light yellowish green	Natural	IaA	[110]	Weak
5	RB	0.23	Gray	Natural	IaA+IaB	[111]	Very weak
6	Flake	0.21	Light brown	Natural	IaA	[111]	Strong
7	RB	0.37	Deep yellow	HPHT synthetic	Ib → IaB	[100]	Moderate
8	RB	0.25	Deep red	HPHT synthetic+ irradiated	IaA	[110]	Moderate
9	RB	0.31	Deep blue	HPHT synthetic	IIb	[100]	Moderate
10	RB	0.07	Red-brown	Natural+irradiated	IaA → IaB	[110]	Strong
11	RB	0.10	Light yellow	Natural+irradiated	IaA+IaB	[111]	Very weak
12	RB	0.11	"Golden" yellow	Natural+irradiated enhancement	IaA+IaB	[100]	Weak
13	RB	0.10	Greenish yellow	Natural+irradiated	IaA+IaB	[100]	Weak
14	RB	0.10	Light gray-green	Natural+irradiated	IaA+IaB	[100]	Very weak
15	RB	0.09	Yellowish green	Natural+irradiated	IaA → IaB	[110]	Moderate
16	RB	0.10	Medium blue	Natural+irradiated	IaA → IaB	[100]	Weak
17	RB	0.09	Light pink	Natural+irradiated	IIa	[110]	Moderate
18	RB	0.11	Medium purplish pink	Natural+irradiated	IIa	[110]	Moderate
19	RB	0.11	Deep purplish pink	Natural+irradiated	IIa	[100]	Moderate
20	RB	0.27	Colorless (E grade)	Natural+HPHT treated	IIa	[110]	Weak
21	RB	0.36	Colorless (F grade)	Natural+HPHT treated	IIa	[111]	Strong
22	RB	0.38	Near-colorless (J grade)	Natural+HPHT treated	IIa	[110]	Weak
23	RB	0.53	Near-colorless (K grade)	Natural+HPHT treated	IaA+IaB	[110]	Weak
24	RB	0.29	Yellowish green	Natural+HPHT treated	IaA → IaB	[110]	Strong
25	Flake	0.18	Yellowish green	Natural+HPHT treated	IaA	[111]	Strong
26	Film	0.01	Colorless	Natural	IaA+IaB	[111]	Weak
27	Film	0.08	Brown	Natural	IaA	[110]	Strong
28	Film	0.01	Brown	Natural	IaA → IaB	[111]	Strong
29	Film	0.02	Colorless	Natural	IaA	[111]	Moderate
30	Film	0.05	Brown	Natural	IaA → IaB	[111]	Strong
31	Film	0.003	Colorless	Natural	IaA+IaB	[110]	Moderate
32	Film	0.001	Colorless	Natural	IaA+IaB	[100]	Moderate
33	Film	0.003	Brown	Natural	IaA	[110]	Strong
34	Film	0.007	Brown	Natural	IaA+IaB	[100]	Strong

<sup>a</sup> RB = round brilliant cut, Film = 0.06 mm to 0.25 mm in thickness.