

GRADE	BINDER (%)	Rockwell Hardness (HRA)	Vicker's Hardness (HV30)	Density (g/cm ³)	Typical** Transverse Rupture Strength (ksi)	Compressive Strength (ksi)	Palmqvist Fracture Toughness (MPa√m)	Abrasion Resistance - Volume Loss (mm ³)	Average Grain Size (μm)
FINE GRAIN (COBALT BINDER)									
PUC-6	6%	91.0-92.2	1500-1740	14.88-15.02	450	760	9.3	2.7	1-3
PUC-9	9%	90.0-91.0	1350-1690	14.56-14.70	520	720	11.6	3.9	1-3
PUC-12	12%	89.0-90.0	1280-1420	14.26-14.40	570	670	15.1	4.6	1-3
PUC-13	13%	88.5-89.5	1180-1380	14.16-14.30	580	650	16.2	5.2	1-3
PUC-15*	15%	87.5-88.5	1160-1330	13.97-14.11	600	600	18.4	6.0	1-3
MEDIUM GRAIN (COBALT BINDER)									
PUC-6M	6%	91.3-92.3	1440-1660	14.89-15.01	470	730	10.0	3.6	2-4
PUC-11C*	11%	88.5-89.5	1180-1430	14.36-14.50	550	610	17.0	5.9	2-4
PUC-13C*	12%	88.2-89.2	1160-1380	14.28-14.38	560	580	21.1	6.3	2-4
PUC-16C*	16%	86.0-87.5	900-1240	13.88-14.01	530	530	29.6	12.2	2-4
SUBMICRON GRAIN (COBALT BINDER)									
PUC-6S	6%	92.0-93.0	1620-1840	14.88-15.02	410	910	9.1	2.1	0.8
PUC-10S*	10%	91.0-92.0	1500-1620	14.46-14.60	530	790	10.5	2.8	0.8
PUC-12S*	12%	90.0-91.0	1380-1500	14.26-14.40	560	740	11.7	3.8	0.8
PUC-15S*	15%	89.0-90.0	1280-1380	13.97-14.11	610	680	14.3	4.1	0.8
FINE GRAIN (NICKEL BINDER)									
PUC-6N	6%	90.5-91.5	1420-1560	14.88-15.02	390	650	10.2	4.0	1-3
PUC-9N	9%	88.5-90.5	1240-1440	14.59-14.69	430	620	13.0	6.1	1-3
PUC-10N*	10%	89.0-90.0	1220-1380	14.46-14.60	440	600	13.6	6.3	1-3
PUC-12N*	12%	88.0-89.0	1150-1280	14.26-14.40	430	540	14.3	6.8	1-3
SPECIALTY GRADES†									
PUC-5S	5% Co w/Ni+Cr ₃ C ₂	93.5-94.5	1830-2130	14.94-15.08	320	950	8.7	1.8	0.5
PUC-7XT	7% Co w/Ni+Cr ₃ C ₂	91.8-93.0	1600-1760	14.51-14.85	410 (590‡)	840	10.1	2.7	0.5
PUC-8eN	8% Ni w/Cr ₃ C ₂	91.5-92.5	1440-1690	14.45-14.65	390 (580‡)	720	9.1	3.6	0.8

All values are for reference only. Please visit our website for up-to-date literature and information.

*PUC Grades available for EDM. Please specify when ordering any grade for EDM applications.

**Typical values are given. For minimum values, refer to standard grade specification sheet.

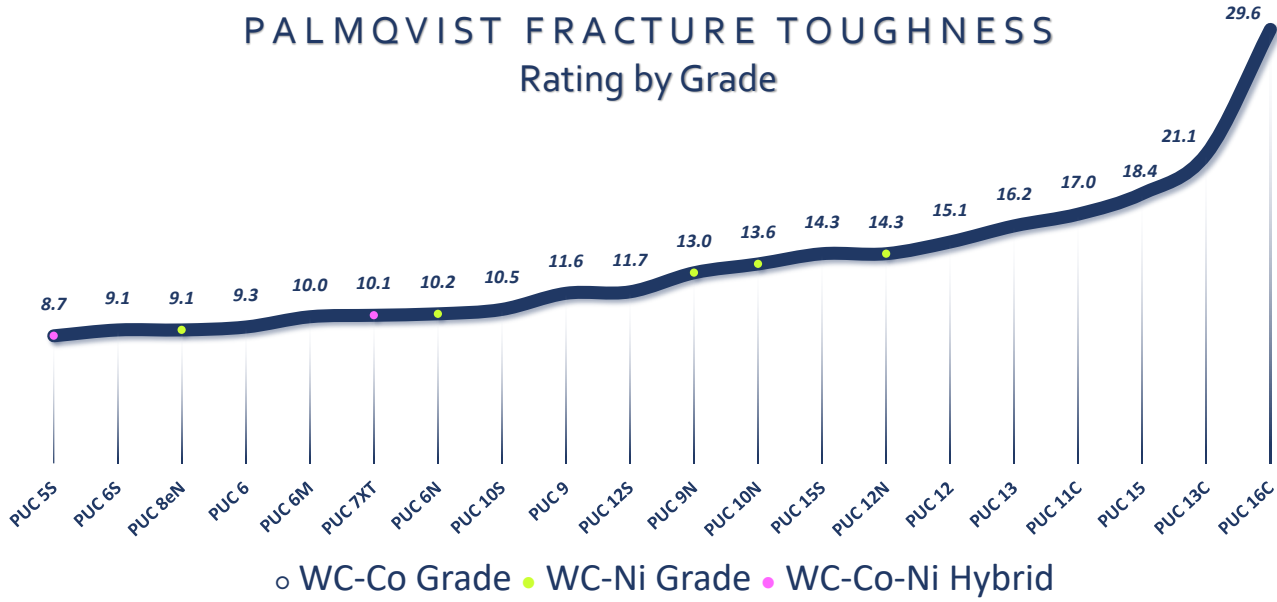
†Additional custom grades may be available upon request.

‡Grade specifications with HIP (Hot Isostatic Pressing) TRS enhancement are available.

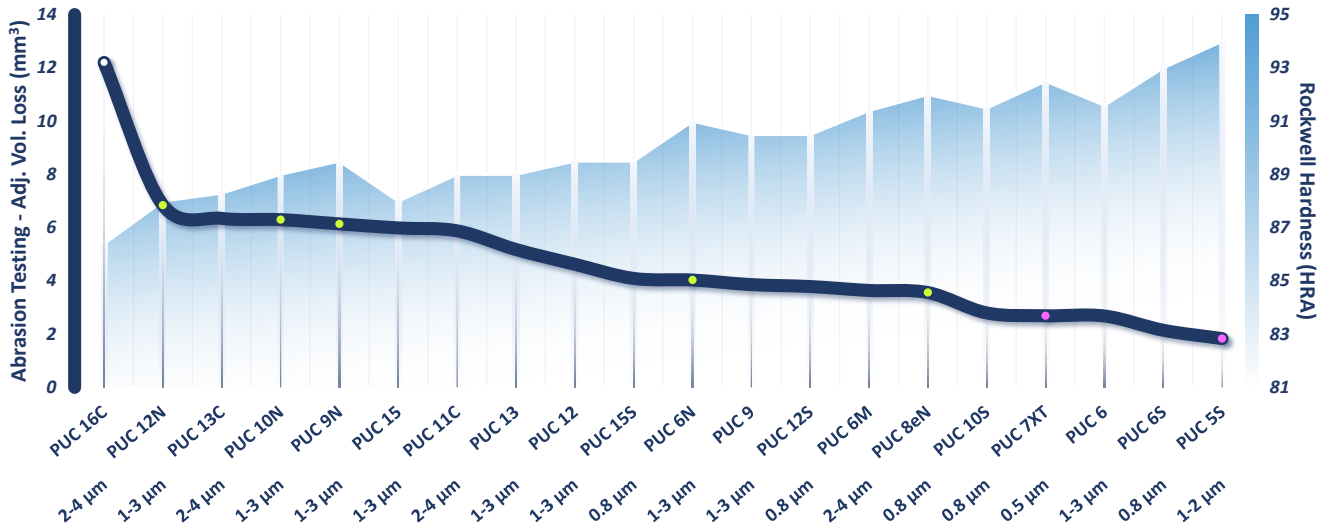


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PALMQVIST FRACTURE TOUGHNESS Rating by Grade



WEAR VS. HARDNESS by Grade / Grain Size



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