

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	9.5	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	590	670	15.1	4.6	1-3
PUC-13	13%	88.5-89.5	1180-1380	14.16-14.30	600	650	16.2	5.2	1-3
PUC-15*	15%	87.5-88.5	1160-1330	13.97-14.11	630	600	18.4	6.0	1-3
MEDIUM GRAIN (COBALT BINDER)									
PUC-6M	6%	91.0-92.3	1440-1660	14.89-15.01	500	730	10.4	3.6	2-4
PUC-11C*	11%	88.5-89.5	1180-1430	14.36-14.50	570	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	9.2	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	570	740	11.7	3.8	0.8
PUC-15S*	15%	89.0-90.0	1280-1380	13.97-14.11	630	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 (490#)	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 (360#)	950	9.1	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	420 (580#)	720	9.2	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.

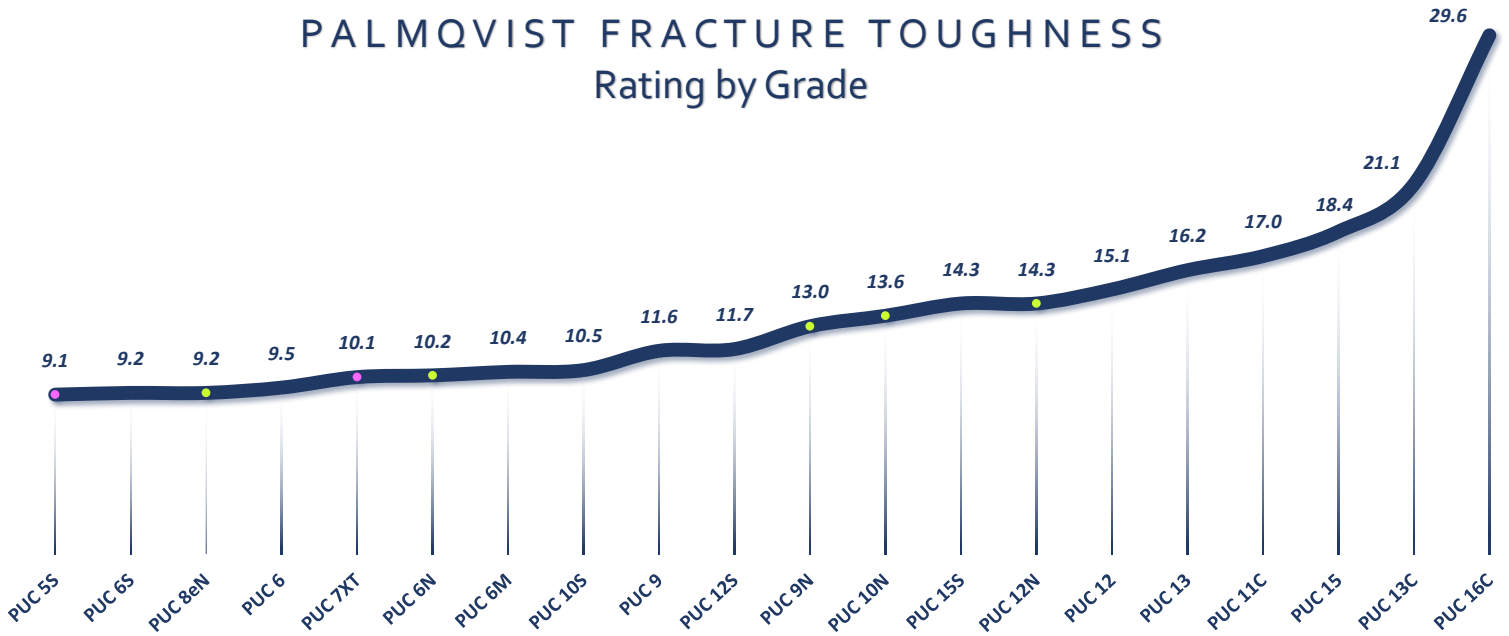
†Additional custom grades may be available upon request.

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



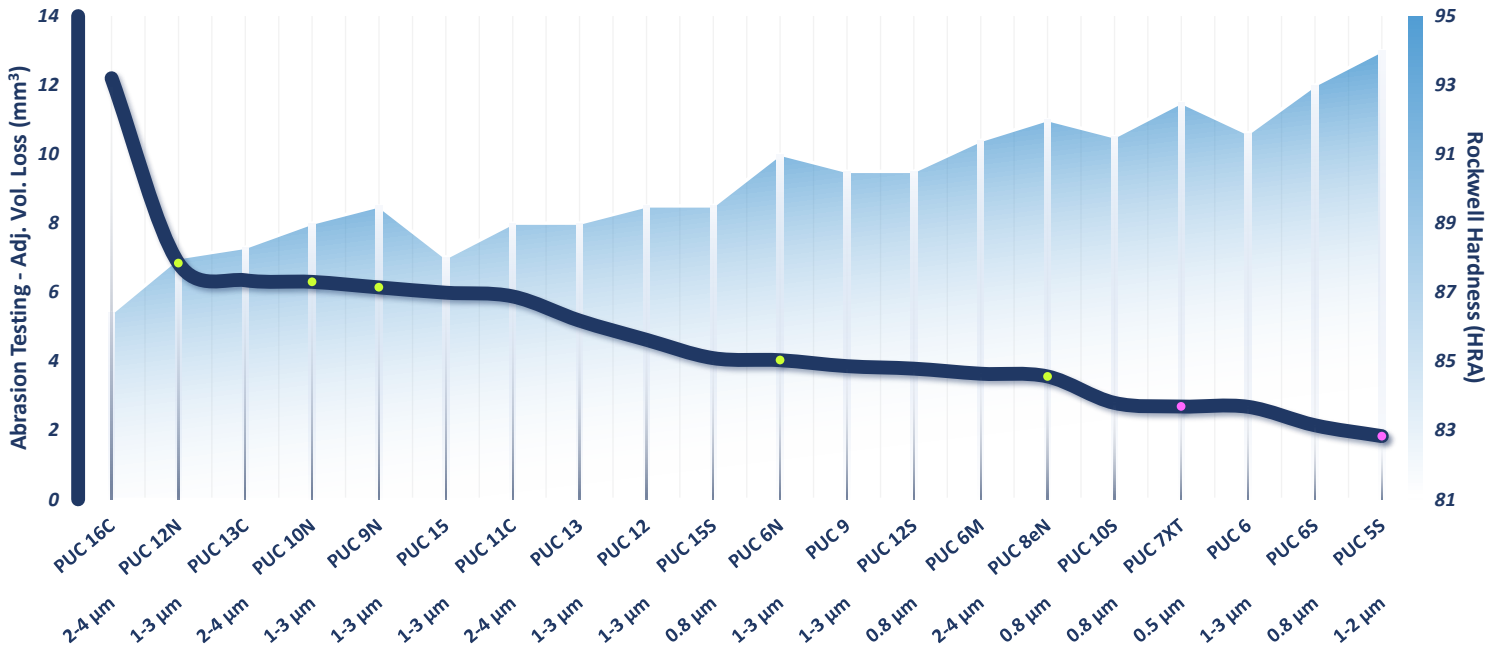
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PALMQVIST FRACTURE TOUGHNESS
Rating by Grade



● WC-Co Grade ● WC-Ni Grade ● WC-Co-Ni Hybrid

WEAR VS. HARDNESS
by Grade / Grain Size



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