ALBERDINGK BOLEY

Alberdingk® U 8500

Biobased PUD for coatings

Technical Data – Alberdingk® U 8500

Solids content [%]	34 – 36
Viscosity [mPas]	20 – 200
pH-value	7.5 – 8.5
MFFT [°C]	approx. 0
Koenig Hardness (s)	125
Polymer type	Polyester
VOC capability	< 50 g/L

Features of Alberdingk® U 8500

- Solvent Free
- Very easy mixing with crosslinkers
- Very good chemical and stain resistance
- High gloss
- Biobased content approx. 21% (on solids)

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Alberdingk® U 8500 vs. Competitor finish

in 2K hardwood floor finish

Competitor - 2K Waterborne Finish

PHYSICAL CHARACTERISTICS:

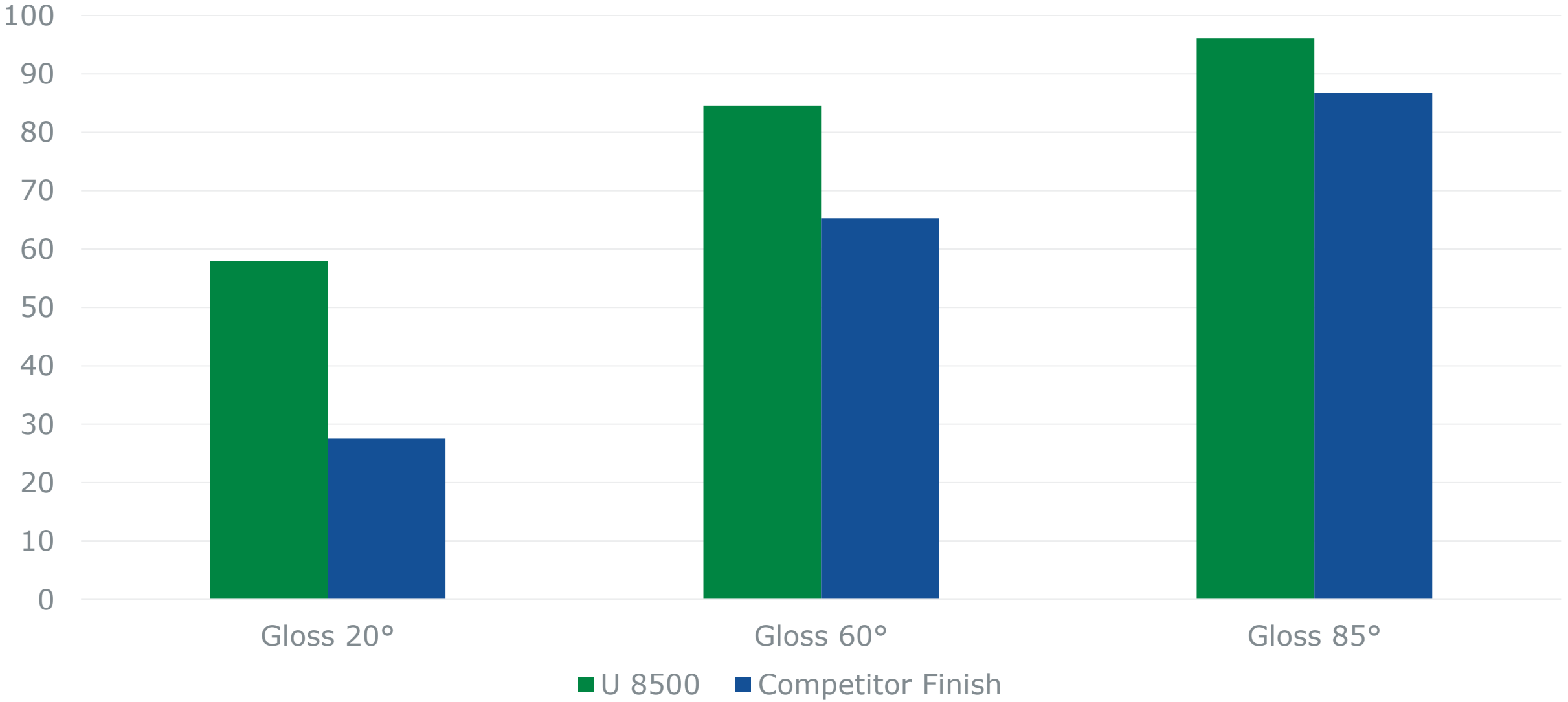
- **Ingredients:** Water, polymeric resins, and amorphous silica.
- **Color:** Milky white (wet)
- **pH-value:** 7.9
- **Solids-content:** 32% (with hardener)
- **Density:** 8.70 lbs./gallon (1.04 S.G.)
- **US Regulatory VOC Compliant:** 150 g/L (with hardener), 155 g/L Gloss (with hardener)
- **Coefficient of Friction:** ≥ 0.5
- **Gloss Level (60°):** 7-10 for Commercial Extra Matte, 15-20 for Commercial Satin, 40-45 for Commercial Semi-Gloss, 65-70 for Commercial Gloss
- **Odor:** Very slight non-offensive odor

Formulas

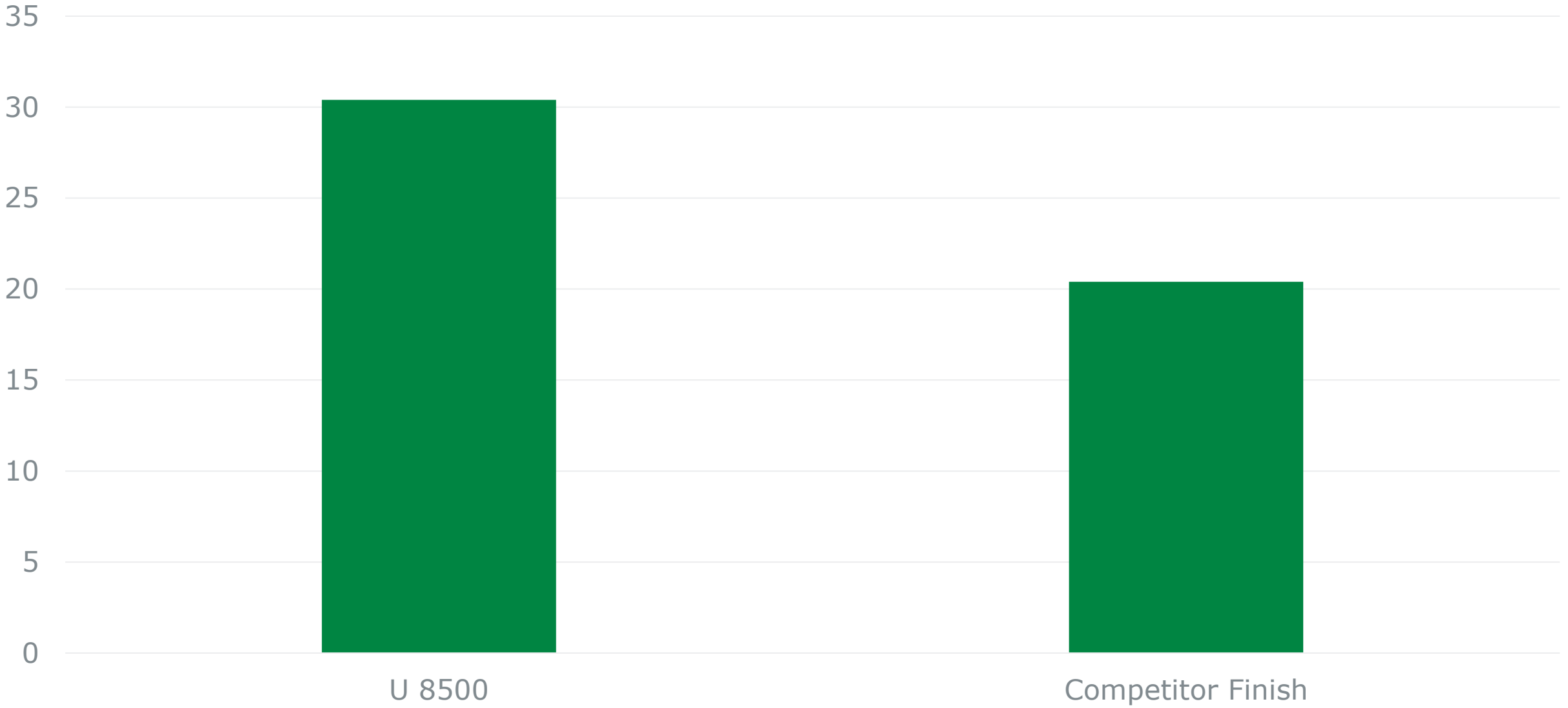
Ingredients	Competitor Finish	U 8500
Alberdingk® U 8500		78.80
Tego Foamex 822		1.20
BYK-346		0.80
Water		18.90
Rheovis PU 1214		0.30
Easaqua 502		10.00
Competitor Finish	100.00	
Competitor crosslinker	10.00	
Total	**110.00**	**110.00**

	% solids (mixed)	VOC (g/L)
U 8500	**34.87**	**37.30**
Competitor Finish	32.00	155.0

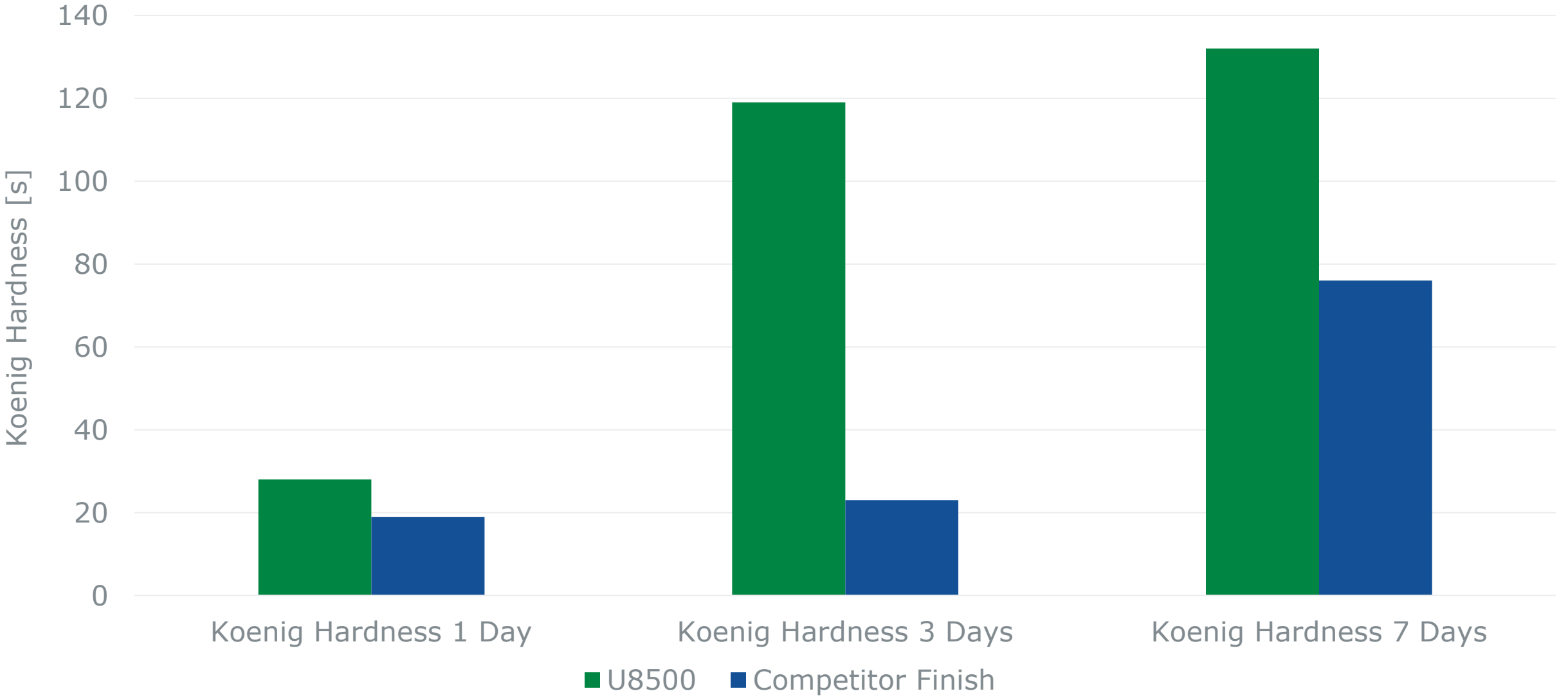
Gloss


100
90
80
70
60
50
40
30
20
10
0
Gloss 20°
Gloss 60°
Gloss 85°
U 8500
Competitor Finish

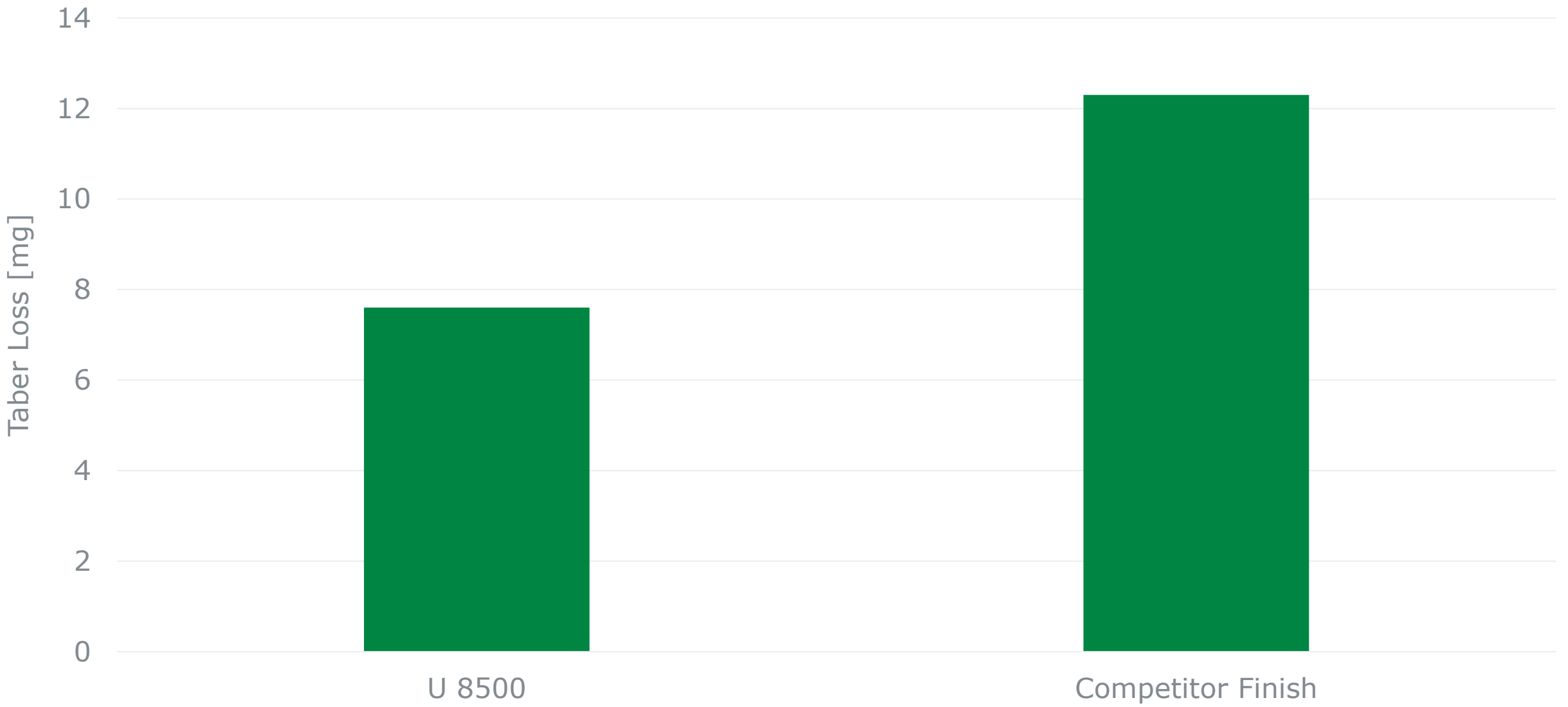
Scratch Resistance: % Gloss Loss (60 degree)



Koenig Hardness @ 1/3/7 Days



Taber Loss



Other Physical Properties

- Black Heel Mark Resistance: Both Excellent
- Fingernail Mar Resistance: Both Excellent
- Coefficient of Friction:

Alberdingk® U 8500:	0.50
Competitor Finish:	0.42

Chemical Resistance

	U 8500	Competitor Finish
DI Water	Pass	Pass
100 Proof Ethanol	Pass	Pass
Cleaning Solution	Pass	Pass
Olive Oil	Pass	Pass
VM&P Naphtha	Pass	Pass
Beer Cola	Pass	Pass

2K Ultra-Matt Finish

U 8500 combined with Alberdingk® PUR MATT 910 offers an unseeable finish with:

- Ultra low gloss (20°/60°/85°): 0.3/3.5/18.0
- Can be used with any sealer or self-sealing
- Suitable for residential and high traffic areas

Conclusion

Alberdingk® U 8500

offers a “Best” 2K wood floor finish

- Higher gloss
- Higher hardness
- Improved Taber wear resistance
- Excellent chemical resistance

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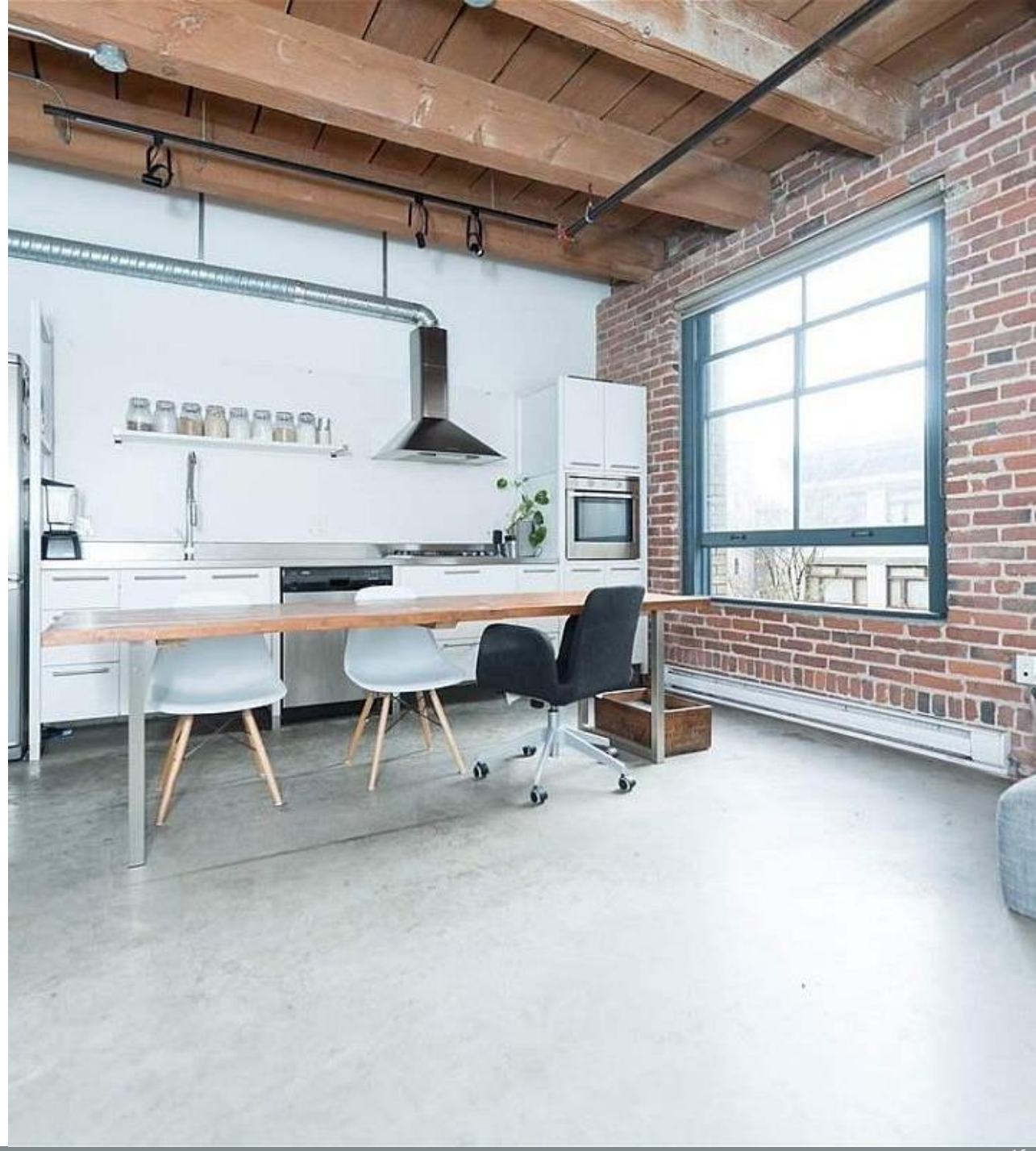
Alberdingk® U 8500 compared to hydroxy-functional acrylics

Project Scope

Alberdingk® U 8500 benchmarked against 2K hydroxyl-functional acrylics for use on concrete floors.

Properties Evaluated

- Gloss
- Surface Hardness
- Chemical Resistance
- Hot Tire Pickup Resistance
- Wear Resistance
- Thermal Shock



Hydroxy Functional Acrylics

		AC 2592	AC 3699	AC 27401	AC 31
Characteristics	Solids	35	39 - 41	37 – 39	49 - 51
	Viscosity	20-200	50-500	100 – 1500	300-2000
	pH	7.5 – 8.5	7.0-8.0	7.5 – 8.5	7.0 – 8.0
	MFFT (°C)	0	40	15	40
	OH content (%) as supplied	0.76	1.76	1.80	0.94
	OH value (mg KOH/g	72	145	156	62
	Koenig Hardness (seconds)	25	150		90?
Suitable for	Topcoat	++	+++	++	+++
	Pigmented		++	+++	+++
	Sealer / primer			++	
Features	Anti Graffiti Resistance			++	
	Hot tire resistance				
	Chemical resistance	++	+++	++	+++
	Flexibility	+++		++	
Markets	General Industrial Flooring			x	
	Sports Flooring	•		•	•
	Exterior	•		•	x
	Metal	x		x	
	Plastic	x		•	
	Furniture	x	x		x
	Stoving		x		x

Hydroxy Functional Acrylics

AC 2592	Extremely soft resin, Tg = -35°C, for "Soft Feel" coatings or as a cobinder for hard acrylics
AC 3699	Excellent in-can clarity and chemical resistance, rapid hardness development, long open time
AC 27401	Excellent chemical resistance, easy-to-clean surface, hot tire resistant
AC 31	For single- and two-pack lacquers, weather resistant. Very good stain resistances in clear and pigmented coatings

Formulas

	U 8500	AC 31	AC 3699	AC 27401	Competitor Finish
U 8500	78.8				
AC 31		66.86			
AC 3699			69		
AC 27401				70.01	
Foamex 822	1.2	0.84	0.4	0.5	
BYK-346	0.8	0.42	0.6	0.3	
Water	18.9	16.9	19.7	28.89	
DPM		7.36	10		
DPnB		7.36			
1214	0.3	0.26	0.3	0.3	
Easaqua 502	10			25.5	
Easaqua XL600		11.38	22.41		
Competitor Gloss					100
Competitor XL					10
Total	**110**	**111.38**	**122.41**	**125.5**	**110**
% Solids	34.87	40.68	41.25	41.82	32
VOC g/l	37.3	270	188.23	5.25	155

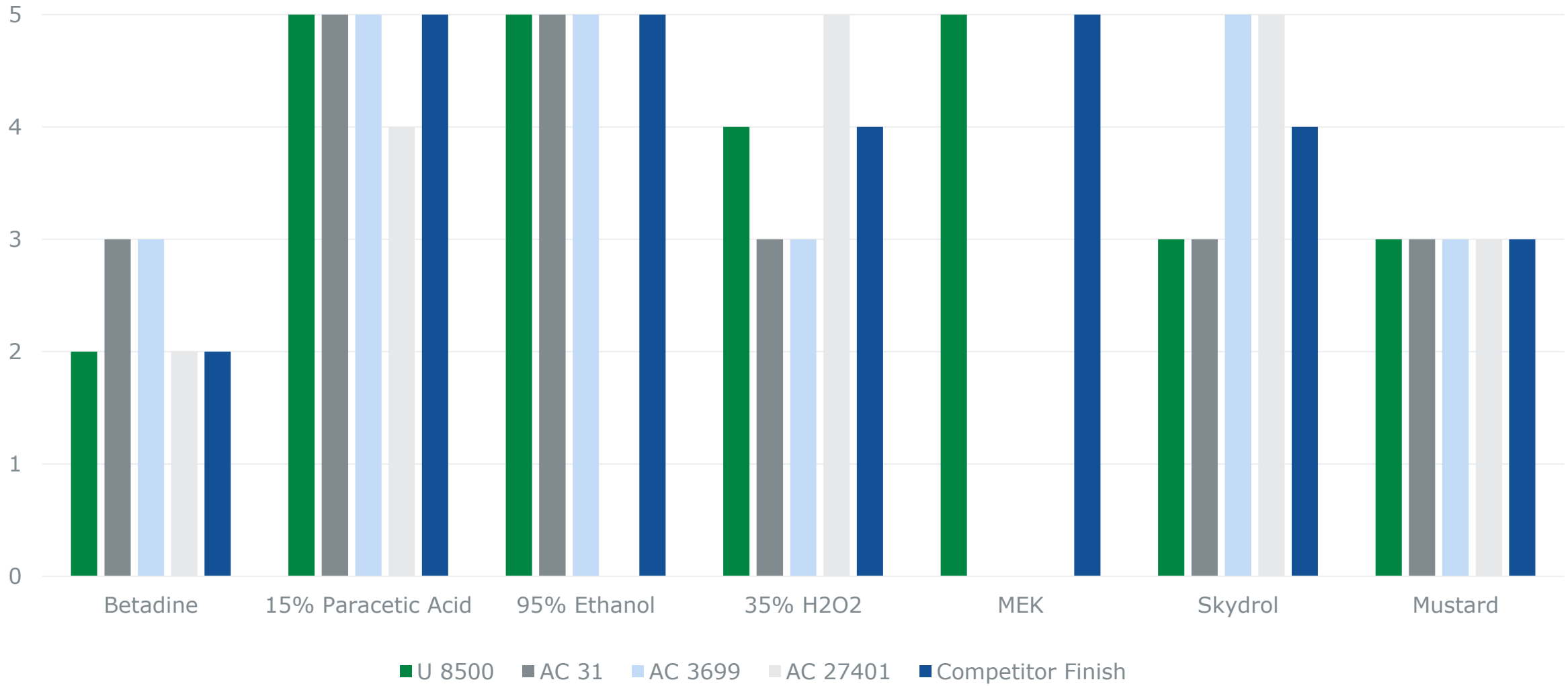
Properties

	U 8500	AC 31	AC 3699	AC 27401	Competitor Finish
VOC g/l	37.3	270	188.23	5.25	155
Gloss 20/60/85	57.9/84.5/96.1	61.7/84.7/96.0	75.8/88.0/97.3	64.3/83.5/96.2	27.6/65.3/86.8
Gloss Loss %	30.4	37.9	38.6	18.9	20.4
Hardness Koenig 1/3/7 Days	28/119/132	18/85/95	31/144/148	20/48/176	19/23/76
Hardness Pencil 1/3/7 Days	HB/F/F	HB/2H/2H	F/F/4H	HB/H/2H	HB/HB/F
Taber Loss mg	7.6	74.6	42.5	24.1	12.3
Thermal Shock Cycles	5	5	5	2	5
CoF	0.5	0.5	0.65	0.48	0.42
MEK 2X Rubs	200	175	200	200	50
Pull Off Adhesion / Fail Point	560 / Adhesive	529 / Adhesive	433 / Adhesive	581 / Adhesive	501 / Adhesive
Cross Hatch Glass	5	5	5	0	5
Wet Cross Hatch Glass	5	5	1	0	0
Fingernail Mar	5	5	5	5	5
BHMR	5	5	5	5	5
Early Water Resistance	5	5	5	5	5

Chemical Resistances

	U 8500	AC 31	AC 3699	AC 27401	Competitor Finish
10% Acidic Acid	5	5	5	5	5
50% NaOH	5	5	5	5	5
Brake Fluid	5	5	5	5	5
ECO-Lab Wash N Walk	5	5	5	5	5
Stainless Steel Cleaner	5	5	5	5	5
10% Glycolic Acid	5	5	5	5	5
20% HCl	5	5	5	5	5
IPA	5	5	5	5	5
10% Lactic Acid	5	5	5	5	5
Red Wine	5	5	5	5	5
Spor Klenz RTU	5	5	5	5	5
DI Water	5	5	5	5	5
Olive Oil	5	5	5	5	5
Pickle Juice	5	5	5	5	5
Ketchup	5	5	5	5	5
Hand Fat	5	5	5	5	5
Chlorox Pro	5	5	5	5	5

Chemical Resistances



Conclusion

Alberdingk® U 8500 offers:

- Lower NCO demand compared to the OH functional acrylics (perhaps offering lower total formula cost to the customer).
- Low VOC capability
- Very good physical properties including incredibly low taber abrasion resistance (7.6 mg).
- Excellent chemical resistance and wear properties.

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Disclaimer:

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