



Wood flooring developments

ESACOTE[®] UA 8004 a new binder for 1K formulations



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ESACOTE[®] UA 8004 (development product)



- **Anionic self X-linking UAD**
- **Solvent free**
- High gloss & clarity
- Good hardness development
- Mechanical & chemical resistances
- Good balance of elasticity & hardness



- Suitable for spray, brush and roller applications
- Suitable for DIY, professional and OEM applications
- Fairly low cosolvent demand
- Excellent flow & levelling

Product properties

Appearance at 25 °C:	opalescent liquid
pH (at 25°C, ASTM E 70):	7.0 - 9.0
Viscosity (Brookfield RVT @ 25 °C, 50 rpm):	< 300 cPs
Solid content, %:	34 - 36

Typical values*

Solvent content, %:	0%
Density, @ 25°C g/ml:	1.01 - 1.03
Minimal film forming temperature, °C:	~30°C
Koenig hardness, sec:	~94
Film aspect:	transparent, glossy not stiky

**These values provide general information and are not part of the product specification*

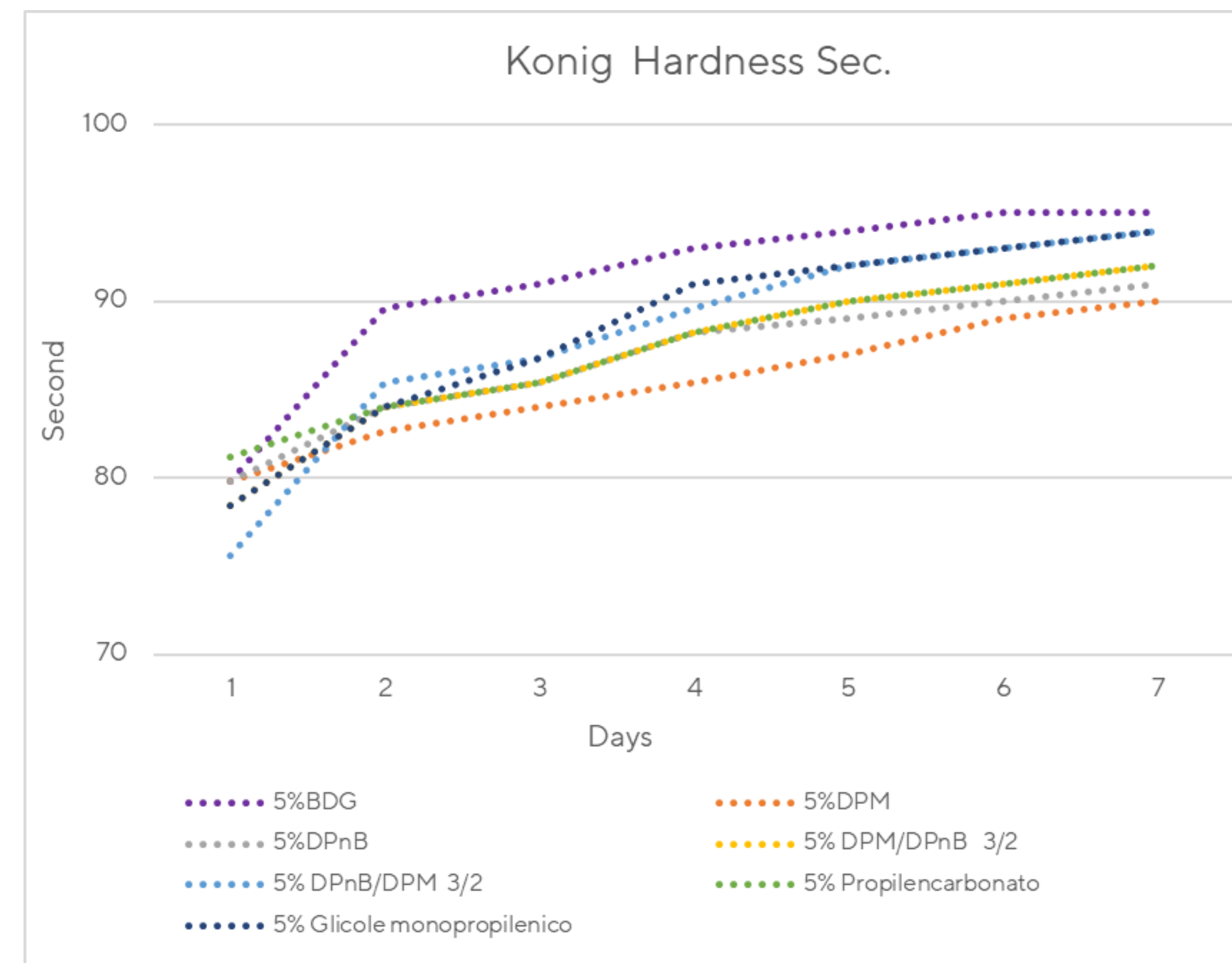
ESACOTE UA 8004

Cosolvents evaluations & chemical resistances



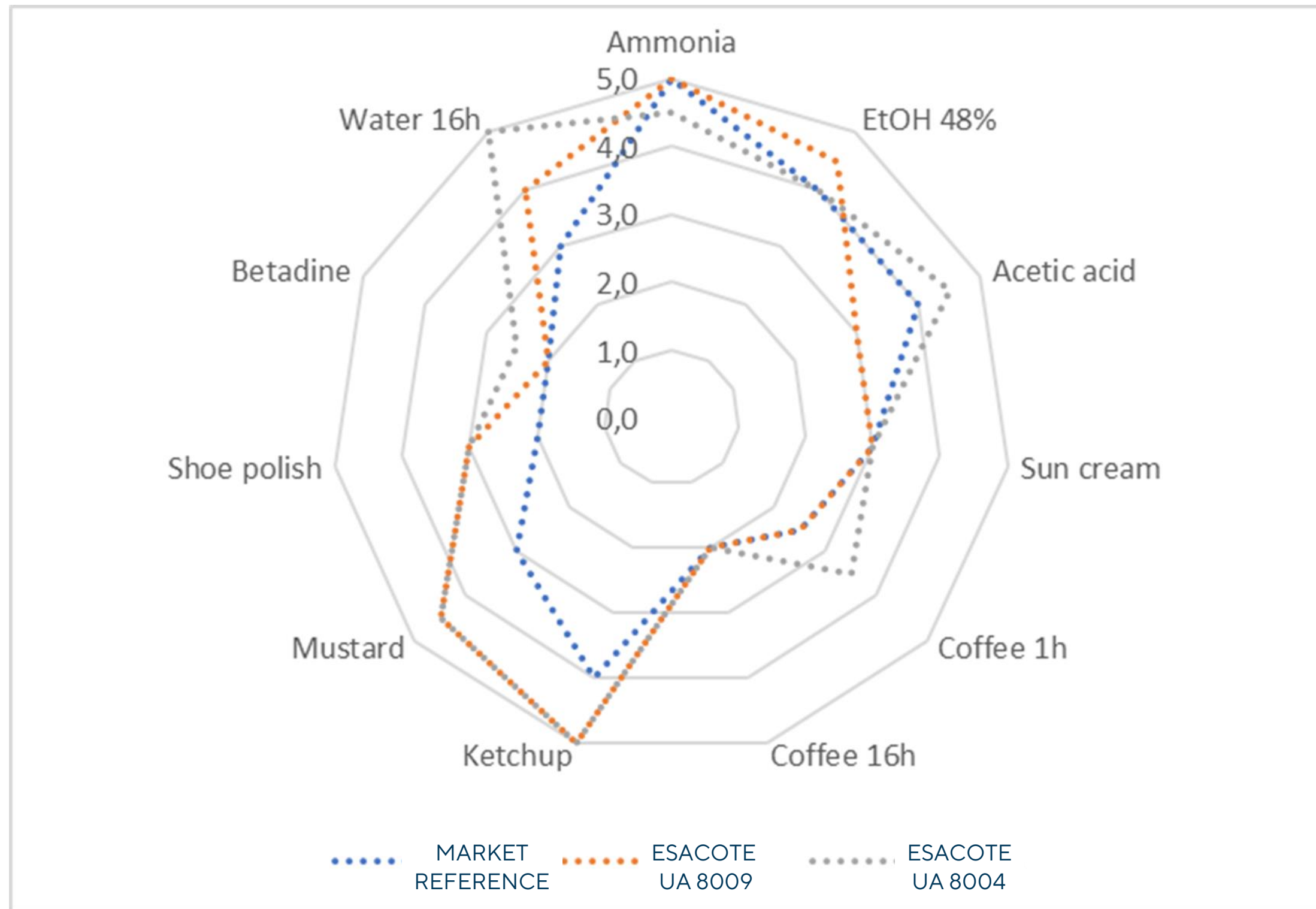
Koenig Hardness

		Trade name	% w/w
A1	Binder	ESACOTE® UA 8004	100.0
B1	Coalescent	Tested solvent	5.0
B2	Demi water	WATER	5.0
C1	Wetting agent (BYK)	BYK 349	0.3
G1	Rheology modifier	VISCOLAM® PS 170 AIR (diluted in water 20%)	1.0
Total			111.3



Koenig hardness (seconds) ESACOTE UA8004 with co-solvents							
Co-solvent	1 day	2 days	3 days	4 days	5 days	6 days	7 days
5% BDG	80	90	91	93	94	95	95
5% DPM	80	83	84	85	87	89	90
5%DPnB	80	84	85	88	89	90	91
5% DPM/DPnB (3/2)	78	84	85	88	90	91	92
5% DPnB/DPM (3/2)	76	85	87	90	92	93	94
5% Propylen Carbonate	81	84	85	88	90	91	92
5% Monopropylen Glycol	78	84	87	91	92	93	94

Chemical & stain resistance on PVC / Water resistance on ABS



QUV Test

QUV TEST (UV lamp 340 nm)
Application: 100 micron wet on glass.

Formulation	Δb^* (Yellowing) 1000h	ΔG_{oss} 20° 1000h	ΔG_{oss} 60° 1000h	ΔG_{oss} 85° 1000h
UA 8004	+0,17	-4	-4	-2

ESACOTE[®] UA 8004

Starting formulations



1K TOP COAT WOOD FLOORING FORMULATION – 15 GU @60°

		Trade name	% w/w
A1	Binder	ESACOTE® UA 8004	75.9
B1	Coalescent (DOW)	BUTYL CARBITOL (BDG)	4.0
C1	Demi water	WATER	4.0
D1	Wetting agent (Evonik)	DYNOL 960	0.5
E1	Defoamer (BYK)	BYK 025	0.5
F1	PE wax dispersion	ADIWAX H05CW	3.0
G1	Matting agent	DECOSPHAERA® 8-20	5.0
H1	Wax (BYK)	CERAFLUOR 1000	0.5
I1	Demi water	WATER	6.4
L1	Rheology modifier	VISCOLAM® PS 170 AIR	0.2
Total			100.0

Chemical and stain resistance EN 12720 – 1K on veneered walnut							
Formula	NH ₃ 10% - 1h	Ethanol 48% - 1h	Acetic A. 10% - 1h	Cle aner 1h	Sun Cream 1h	Water 1 / 6 / 16h	Olive Oil 1h
F04W38-2024	2	5	5	5	5	5/5/5	5

Chemical and stain resistance EN 12720 – 1K on veneered Beech							
Formula	Coffee 1h (40g/L)	Coffee 6h (40g/L)	Sun cream 1h	Ketchup 1h	Betadine 1h	Mustard 1h	Shoe polish 1h
F04W38-2024	4,5	3,5	5	5	2	5	3,5



1K TOP COAT WOOD FLOORING FORMULATION – 5 GU @60°

		Trade name	% w/w
A1	Binder	ESACOTE® UA 8004	60.0
B1	Matting agent	DECOSPHAERA® 15F	15.0
C1	Coalescent (DOW)	DOWANOL DPnB	3.0
D1	Wetting agent (Evonik)	DYNOL 960	0.5
E1	Defoamer (BYK)	BYK 025	0.3
F1	Defoamer (Evonik)	TEGO FOAMEX 822	0.3
G1	PE wax dispersion	ADIWAX H05CW	3.0
H1	Micronized PE wax (BYK)	CERAFLUOR 927	0.5
I1	Demi water	WATER	16.4
L1	Rheology modifier	VISCOLAM® PS 170 AIR (20% dilution)	1.0
Total			100.0

Formulation	Weight loss (g) – CS17 – 1000 round		
F01AW08-2024 1K	0.063 gr		
Gloss	20°	60°	85°
F01AW38-2024 1K	1	6.6	9.6

Chemical and stain resistance EN 12720 – 1K on solid oak (3 coats by roller)

Formula	NH ₃ 10% - 1h	Ethanol 48% - 1h	Acetic A. 10% - 1h	Water 1/6/16 h	Ethanol 96% - 1h
F01AW38-2024	3	4.5	5	5/5/5	3.5

Chemical and stain resistance EN 12720 – 1K on solid oak (3 coats by roller)

Formula	Coffee - 1h (40g/L)	Tea 1h	Na ₂ CO ₃ 1h 10%	Ketchup 1h	Olive oil 1h	Mustard 1h	Shoe polish 1h
F01AW38-2024	5	3.5	3.5	5	5	5	2



1K TOP COAT WOOD FLOORING FORMULATION – 5 GU @60°

		Trade name	% w/w
A1	Binder	ESACOTE® UA 8004	60.0
B1	Matting agent	DECOSPHAERA® 15F	10.0
C1	Inherently matt binder	ESACOTE® PU 980	3.0
D1	Coalescent (DOW)	DOWANOL DPnB	3.0
E1	Wetting agent (Evonik)	DYNOL 960	0.5
F1	Defoamer (BYK)	BYK 025	0.3
G1	Defoamer (Evonik)	TEGO FOAMEX 822	0.3
H1	PE wax dispersion	ADIWAX H05CW	3.0
I1	Micronized PE wax (BYK)	CERAFLUOR 927	0.5
L1	Silica (Grace)	SYLOID AQ 880	2.5
M1	Demi water	WATER	14.9
N1	Rheology modifier	VISCOLAM® PS 202 AIR	2.0
Total			100.0

Formulation	Weight loss (g) – CS17 – 1000 round		
F02AW08-2024 1K	0.067 gr		
Gloss	20°	60°	85°
F02AW38-2024 1K	0.8	4.7	6.0

Chemical and stain resistance EN 12720 – 1K on solid oak (3 coats by roller)					
Formula	NH ₃ 10% - 1h	Ethanol 48% - 1h	Acetic A. 10% - 1h	Water 1/6/16 h	Ethanol 96% -1h
F02AW38-2024	3	3	5	5/5/5	3

Chemical and stain resistance EN 12720 – 1K on solid oak (3 coats by roller)							
Formula	Coffee (40g/L) 1h	Tea 1h	Na ₂ CO ₃ 10% 1h	Ketchup 1h	Olive oil 1h	Mustard 1h	Shoe polish 1h
F02AW38-2024	5	5	3.5	5	5	5	2



1K TOP COAT WOOD FLOORING FORMULATION – 5 GU @60°

		Trade name	% w/w
A1	Binder	ESACOTE® UA 8004	60.0
B1	Matting agent	DECOSPHAERA® 15F	10.0
C1	Matting agent	DECOSPHAERA® 30F	5.0
D1	Coalescent (DOW)	DOWANOL DPnB	3.0
E1	Wetting agent (Evonik)	DYNOL 960	0.5
F1	Defoamer (BYK)	BYK 025	0.3
G1	Defoamer (Evonik)	TEGO FOAMEX 822	0.3
H1	PE wax dispersion	ADIWAX H05CW	3.0
I1	Micronized PE wax (BYK)	CERAFLUOR 927	0.5
L1	Demi water	WATER	15.4
M1	Rheology modifier	VISCOLAM® PS 202 AIR	2.0
Total			100.0

Formulation	Weight loss (g) – CS17 – 1000 round		
F03AW08-2024 1K	0.067 gr		
	20°	60°	85°
F03AW38-2024 1K	0.7	4.8	1.8

Chemical and stain resistance EN 12720 – 1K on solid oak (3 coats by roller)					
Formula	NH ₃ 10% - 1h	Ethanol 48% - 1h	Acetic A. 10% - 1h	Water 1/6/6 h	Ethanol 96% -1h
F03AW38-2024	2	3	5	5/5/5	2

Chemical and stain resistance EN 12720 – 1K on solid oak (3 coats by roller)							
Formula	Coffee (40g/L) 1h	Tea 1h	Na ₂ CO ₃ 10% 1h	Ketchup 1h	Olive oil 1h	Mustard 1h	Shoe polish 1h
F03AW38-2024	5	5	3.5	5	5	5	2



1K TOP COAT WOOD FLOORING FORMULATION – 4 GU @60°

		Trade name	% w/w
A1	Binder	ESACOTE® UA 8004	50.0
B1	Matting agent	DECOSPHAERA® 15F	5.0
C1	Matting agent	SPHEROMERS® CA 20	5.0
D1	Inherently matt PUD	ESACOTE® PU 980	3.0
E1	Coalescent (DOW)	DOWANOL DPnB	2.5
F1	Coalescent (DOW)	DOWANOL DPM	0.5
G1	Wetting agent (Tego)	TEGO 236	0.5
H1	Defoamer (BYK)	BYK 025	0.3
I1	Defoamer (Evonik)	TEGO FOAMEX 822	0.3
L1	PE wax dispersion	ADIWAX H05CW	3.0
M1	Micronized PE wax (BYK)	CERAFLUOR 927	0.5
N1	Silica (Grace)	SYLOID AQ 880	3.0
O1	Demi water	WATER	24.4
P1	Rheology modifier	VISCOLAM® PS 202 AIR	2.0
Total			100.0

Gloss	20°	60°	85°
F03AW38-2024 1K	0.7	4.4	3.6



1K TOP COAT WOOD FLOORING FORMULATION – 3 GU @60°

		Trade name	% w/w
A1	Binder	ESACOTE® UA 8004	50.0
B1	Matting agent	DECOSPHAERA® 15F	10.0
D1	Inherently matt PUD	ESACOTE® PU 980	3.0
E1	Coalescent (DOW)	DOWANOL DPnB	2.5
F1	Coalescent (DOW)	DOWANOL DPM	0.5
G1	Wetting agent (Tego)	TEGO 236	0.5
H1	Defoamer (BYK)	BYK 025	0.3
I1	Defoamer (Evonik)	TEGO FOAMEX 822	0.3
L1	PE wax dispersion	ADIWAX H05CW	3.0
M1	Micronized PE wax (BYK)	CERAFLUOR 927	0.5
N1	Silica (Grace)	SYLOID AQ 880	3.0
O1	Demi water	WATER	24.4
P1	Rheology modifier	VISCOLAM® PS 202 AIR	2.0
Total			100.0

Gloss	20°	60°	85°
F03AW38-2024 1K	0.6	2.8	1.0



1K TOP COAT WOOD FLOORING FORMULATION – 5 GU @60°



