



Wood flooring developments

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

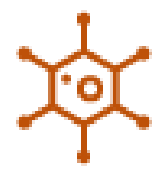


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ESACOTE[®] UA 8004 (development product)



➤ **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

Typical values

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

Product properties

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

1K & 2K formulations comparison

ESACOTE[®] UA 8004 vs ESACOTE[®] PU 77



GLOSSY 2K TOP COAT WOOD FLOORING FORMULATION

		Trade name	% w/w
A1	Binder	ESACOTE® PU 77	80.0
B1	Coalescent (DOW)	BUTYL CARBITOL (BDG)	2.0
B2	Demi water	WATER	2.0
C1	Wetting agent (Münzing)	EDAPLAN 451	0.5
D1	Defoamer (Evonik)	TEGO 825	0.5
E1	Defoamer (BYK)	BYK 025	0.5
F1	Surface additive (BYK)	BYK 333	0.3
G1	Rheology modifier	VISCOLAM® PS 202 AIR	2.0
H1	Demi water	WATER	12.2
I1	Isocyanic crosslinker	CROSSLINKER 08 LM	10.0
Total			110.0

Solid Content ≈ 28%

Chemical and stain resistance EN 12720 – 2K

Formulation	NH ₃ 10% - 1h	Ethanol 48% - 1h	Acetic Acid 10% 1h	Ketchup 1h	Coffee (40g/L) 1h	Mustard 1h	Shoe polish 1h
F03W17-2021 2K PU 77	5	5	5	5	5	5	5

Formulation	MEK 10 min	Acetone 10 min	Paraffin Oil	Water 1h	Water 8h	Water 16h
F03W17-2021 2K PU 77	1	2	5	5	5	5



GLOSSY 1K TOP COAT WOOD FLOORING FORMULATION

		Trade name	% w/w
A1	Binder	ESACOTE® UA 8004	80.0
B1	Coalescent (DOW)	BUTYL CARBITOL (BDG)	5.0
C1	Demi water	WATER	5.0
D1	Wetting agent (Evonik)	DYNOL 960	0.3
E1	Surfactant agent	BAMAX 104-PG	0.5
F1	Defoaming agent (Evonik)	TEGO 822	0.2
G1	Slip agent (BYK)	BYK 333	0.2
H1	Defoaming agent (BYK)	BYK 011	0.5
I1	Demi water	WATER	6.3
L1	Rheology modifier	VISCOLAM® PS 202	2.0
Total			100.0

Chemical and stain resistance EN 12720 – 1K on veneered walnut

Formula	Ethanol 96% - 1h	Ethanol 48% - 1h	Acetic A. 10% - 1 h	Cleaner 1h	Cleaner 6h	Water 1 / 6 / 16h	Sun cream 1h	Olive oil 1h
ESACOTE® UA 004	2	5	5	5	5	5/5/5	5	5

Chemical and stain resistance EN 12720 – 1K on veneered beech wood

Formula	Coffee (40g/L) 1 h	Coffee (40g/L) 6h	Coffee (40g/L) 16h	Shoe polish 1 h	Ketchup 1h	Mustard 1h	Betadine 1h	BIC 1h	Pencil 1h	NH ₃ 10% 1h
ESACOTE® UA 8004	3,5	3,5	3,5	3	5	5	2,5	3,5	2,5	3

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% - 1 h	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°



