



JETFINE[®] 1

A simple, cost-effective, natural
alternative to opaque polymers

- Formulation guidelines at different PVCs

INTRODUCTION

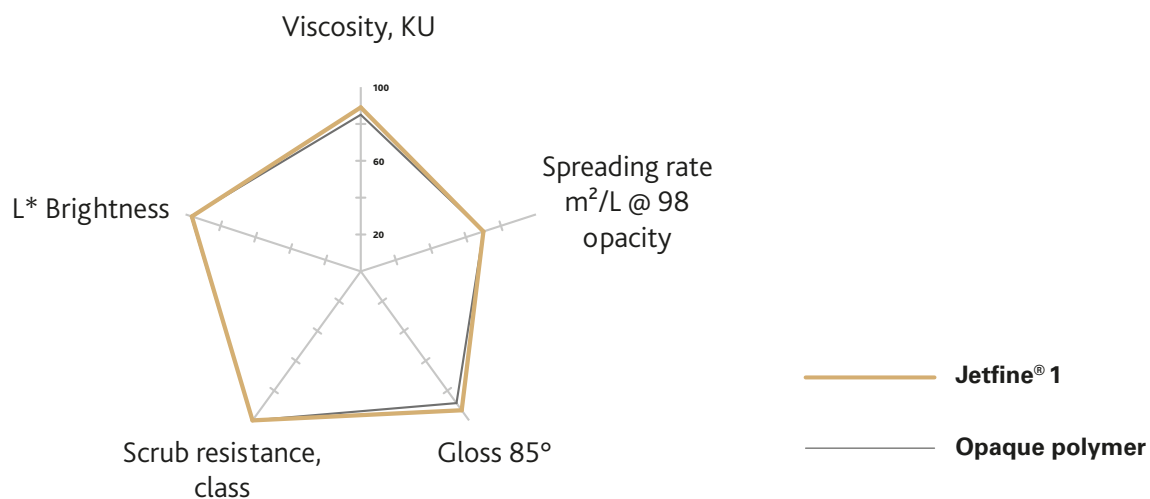
By reformulating as demonstrated in the following examples, the opaque polymer can quite simply be totally replaced by 60% Jetfine® 1 and 40% water, resulting in more cost-effective formulations with equivalent performance.

FORMULATION AT PVC 43.8%

Formulation, weight %	Opaque polymer	With Jetfine® 1
H ₂ O+additives	36.5	38.5
TiO ₂	18.0	18.0
Imercarb™ 32	0.0	0.0
Imercarb™ 22	0.0	0.0
Extender	3.0	3.0
Luzenac 00C	7.5	7.5
Opaque polymer	5.0	0.0
Jetfine® 1	0.0	3.0
Vinyl acetate copolymer, 50%	30.0	30.0
Total	100.0	100.0
PVC (%)	43.8	40.2
Density (g/ml)	1.30	1.33

Formulation, properties	Opaque polymer	With Jetfine® 1
Krebs viscosity (KU)	85	89
Spreading rate (m ² /L) @ 98 opacity (ISO 6504-3)	6.5	6.5
Gloss 85° @ 100µm wet (EN ISO 2813)	21.6	16.8
Scrub resistance class (ISO 11998)	1	1
Cracking: application on plaster board @ 300 to 1500µm wet film thickness	no cracks	no cracks
Brightness (at opacity > 99.5) L* a* b*	96.8 -0.59 2.69	96.4 -0.62 2.75
Cost saving per litre*		1.8%

*subject to opaque polymer price



FORMULATION AT PVC 69.5%

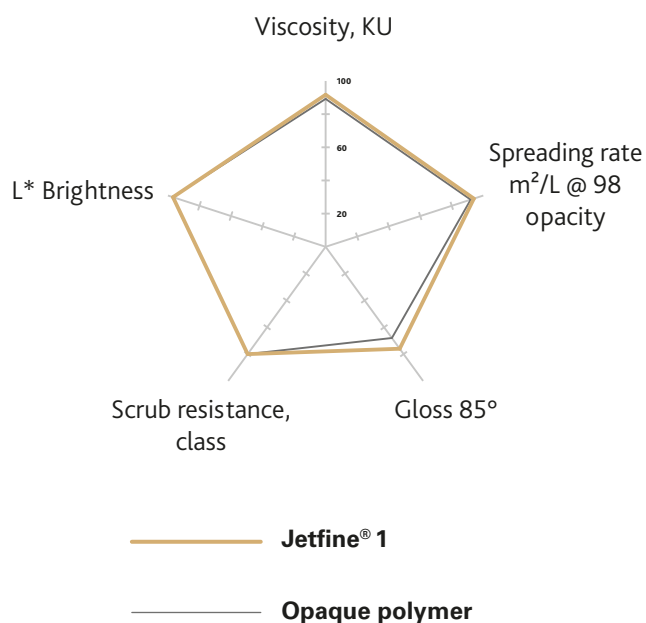
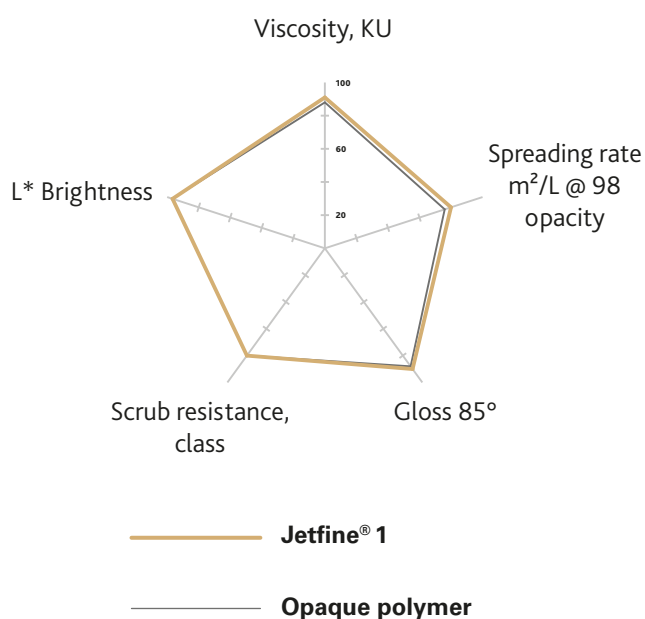
Formulation, weight %	Opaque polymer	With Jetfine® 1
H ₂ O+additives	37.0	39.4
TiO ₂	10.0	10.0
Imercarb™ 32	8.0	8.0
Imercarb™ 22	7.0	7.0
Extender	8.0	8.0
Luzenac 00C	8.0	8.0
Opaque polymer	6.0	0.0
Jetfine® 1	0.0	3.6
Vinyl acetate copolymer, 50%	16.0	16.0
Total	100.0	100.0
PVC (%)	69.5	67.1
Density (g/ml)	1.42	1.47
Formulation, properties	Opaque polymer	With Jetfine® 1
Krebs viscosity (KU)	88	91
Spreading rate (m ² /L) @ 98 opacity (ISO 6504-3)	6.8	7.0
Gloss 85° @ 100µm wet (EN ISO 2813)	3.2	3.0
Scrub resistance class (ISO 11998)	2	2
Cracking: application on plaster board @ 300 to 1500µm wet film thickness	no cracks	no cracks
Brightness (at opacity > 99.5) L* a* b*	96.7 -0.47 2.27	96.6 -0.45 2.36
Cost saving per litre*		4.5%

*subject to opaque polymer price

FORMULATION AT PVC 77%

Formulation, weight %	Opaque polymer	With Jetfine® 1
H ₂ O+additives	34.0	36.0
TiO ₂	16.0	16.0
Imercarb™ 32	7.0	7.0
Imercarb™ 22	5.0	5.0
Extender	10.0	10.0
Luzenac 00C	11.0	11.0
Opaque polymer	5.0	0.0
Jetfine® 1	0.0	3.0
Vinyl acetate copolymer, 50%	12.0	12.0
Total	100.0	100.0
PVC (%)	77.0	75.5
Density (g/ml)	1.54	1.59
Formulation, properties	Opaque polymer	With Jetfine® 1
Krebs viscosity (KU)	107	110
Spreading rate (m ² /L) @ 98 opacity (ISO 6504-3)	12.6	12.7
Gloss 85° @ 100µm wet (EN ISO 2813)	8.2	7.4
Scrub resistance class (ISO 11998)	2	2
Cracking: application on plaster board @ 300 to 1500µm wet film thickness	600	600
Brightness (at opacity > 99.5) L* a* b*	97.0 -0.27 2.58	96.8 -0.30 2.65
Cost saving per litre*		2.2%

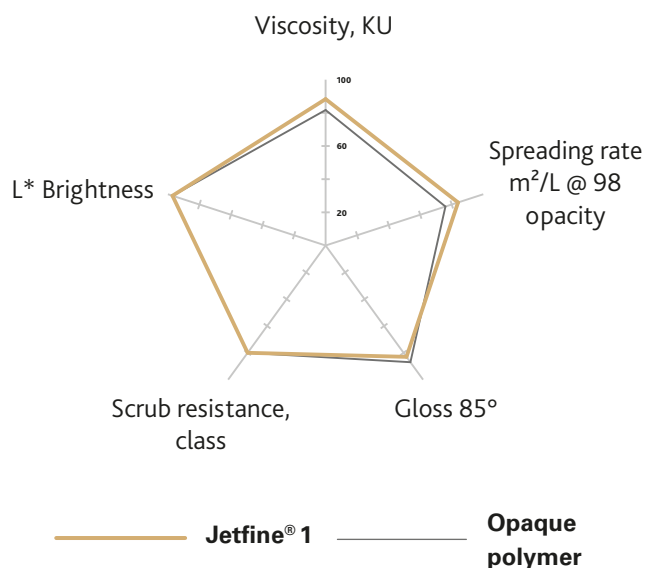
*subject to opaque polymer price



FORMULATION AT PVC 81.4%

Formulation, weight %	Opaque polymer	With Jetfine® 1
H ₂ O+additives	40.0	41.6
TiO ₂	8.0	8.0
Imercarb™ 32	9.0	9.0
Imercarb™ 22	10.0	10.0
Extender	8.0	8.0
Luzenac 00C	12.0	12.0
Opaque polymer	4.0	0.0
Jetfine® 1	0.0	2.4
Vinyl acetate copolymer, 50%	9.0	9.0
Total	100.0	100.0
PVC (%)	81.4	80.4
Density (g/ml)	1.49	1.52
Formulation, properties	Opaque polymer	With Jetfine® 1
Krebs viscosity (KU)	98	106
Spreading rate (m ² /L) @ 98 opacity (ISO 6504-3)	8.8	9.2
Gloss 85° @ 100µm wet (EN ISO 2813)	3.3	3.7
Scrub resistance class (ISO 11998)	2	2
Cracking: application on plaster board @ 300 to 1500µm wet film thickness	950	1000
Brightness (at opacity > 99.5) L* a* b*	97.1 -0.34 2.03	97.1 -0.32 2.09
Cost saving per litre*		4.2%

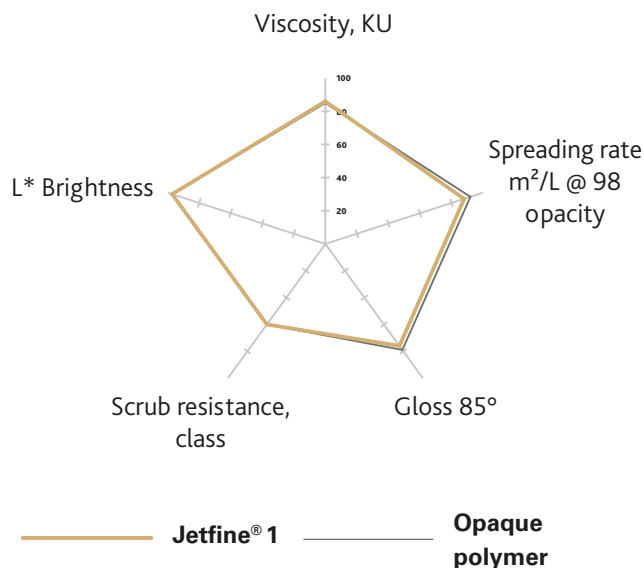
*subject to opaque polymer price



FORMULATION AT PVC 86.6%

Formulation, weight %	Opaque polymer	With Jetfine® 1
H ₂ O+additives	44.0	45.2
TiO ₂	6.0	6.0
Imercarb™ 32	11.0	11.0
Imercarb™ 22	10.0	10.0
Extender	10.0	10.0
Luzenac 00C	10.0	10.0
Opaque polymer	3.0	0.0
Jetfine® 1	0.0	1.8
Vinyl acetate copolymer, 50%	6.0	6.0
Total	100.0	100.0
PVC (%)	86.6	86.0
Density (g/ml)	1.48	1.51
Formulation, properties	Opaque polymer	With Jetfine® 1
Krebs viscosity (KU)	85	86
Spreading rate (m ² /L) @ 98 opacity (ISO 6504-3)	9.6	9.4
Gloss 85° @ 100µm wet (EN ISO 2813)	4.1	4.4
Scrub resistance class (ISO 11998)	3	3
Cracking: application on plaster board @ 300 to 1500µm wet film thickness	no cracks	no cracks
Brightness (at opacity > 99.5) L* a* b*	97.2 -0.28 1.95	97.2 -0.25 2.01
Cost saving per litre*		4.3%

*subject to opaque polymer price



For more information on other functions and benefits of Jetfine® 1, please ask for our technical leaflet *Jetfine® 1, Ultrafine talc for optimal dry hiding and TiO₂ extension*
www.imerys-performance-additives.com

