ADDISP™ ECO

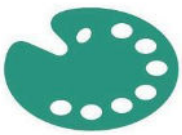
The 'One for All' Pigment Dispersant

No ball mill or pearl mill needed!

ADDISP™ ECO is a universal reactive pigment dispersant partially sourced from biomass. As a 'One for All' solution, ADDISP™ ECO excels in preparing organic and inorganic pigment concentrates with particle sizes below 5 microns by using only a dissolver.

Reduction of manufacturing costs & waste.
Lower investment costs

Dispersing with dissolver, no milling with ball/pearl mill necessary



Wide variety of pigments: organic, inorganic & carbon black

Water-, solvent & UV-based applications

Readily biodegradable & partly biobased product

Universal pigment concentrate PR170

The pigment preparations that are formulated using ADDISP™ ECO can be used for solvent-borne, water-borne and UV applications. Preparation of PR170 pigment concentrate using a dissolver is shown below.

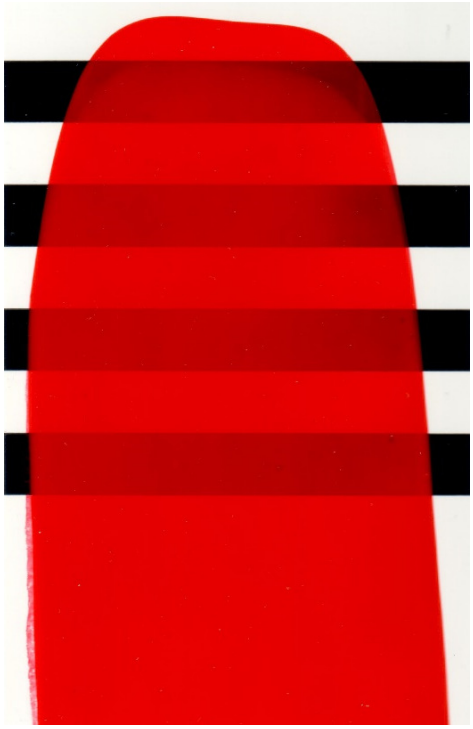
Sudaperm Red 2963C	
1 Demineralised water	33.5
2 **ADDISP™ ECO**	15.0
3 Foamstop™ SX 47	0.2
4 Pigment	25.0
↓ *Disperse at high speed, 3000 RPM (≥6.3 m/s)*	
6 Demineralised water	26.2
7 Biocide	0.1
Total	**100.0**

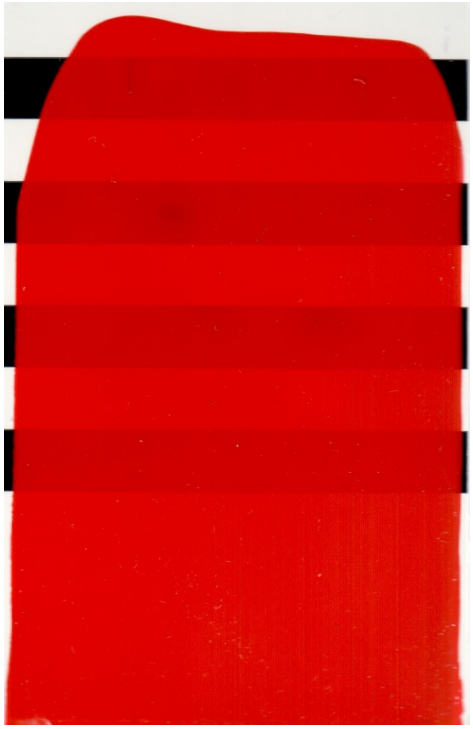
Properties	
Hegman fineness (µm)	**0-5**
Particle size by DLS (nm)	**466**
Viscosity Anton Paar (mPa·s)	**1794**

Using the universal pigment concentrate enables the preparation of water-based and synthetic paints.

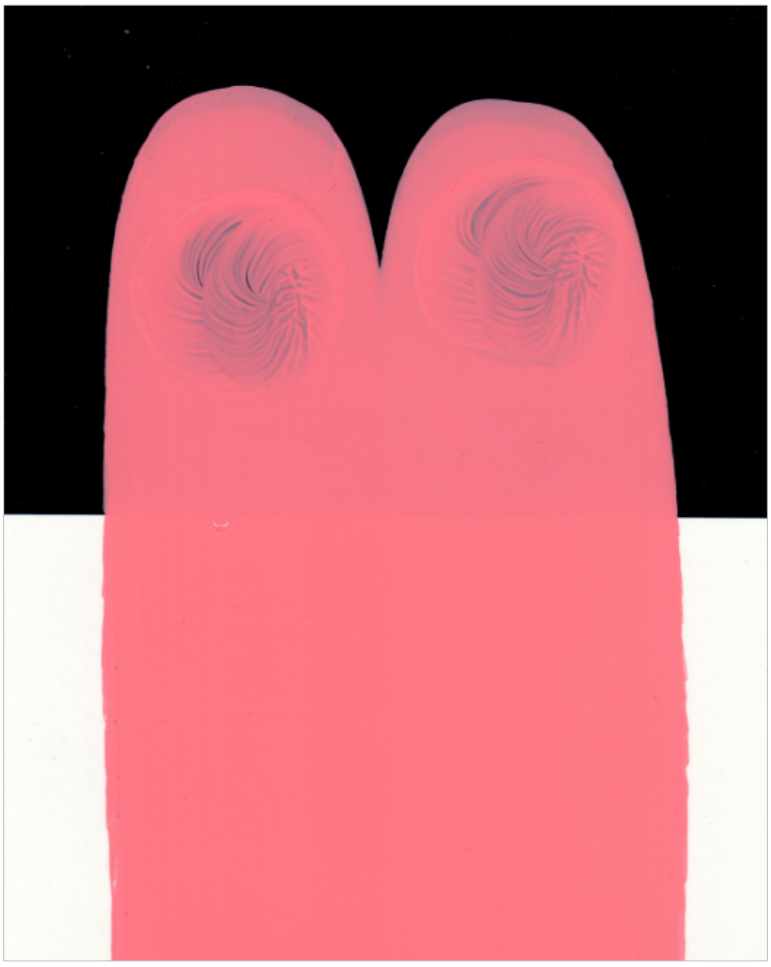
Water-based paint	
1 ADDISP™ ECO pigment concentrate	24.0
2 Component A – WB PU binder	56.0
3 Component B – NCO hardener	20.0
Total	**100.0**

Solvent-based paint	
1 ADDISP™ ECO pigment concentrate	30.0
2 Synthetic transparent alkyd resin	70.0
Total	**100.0**



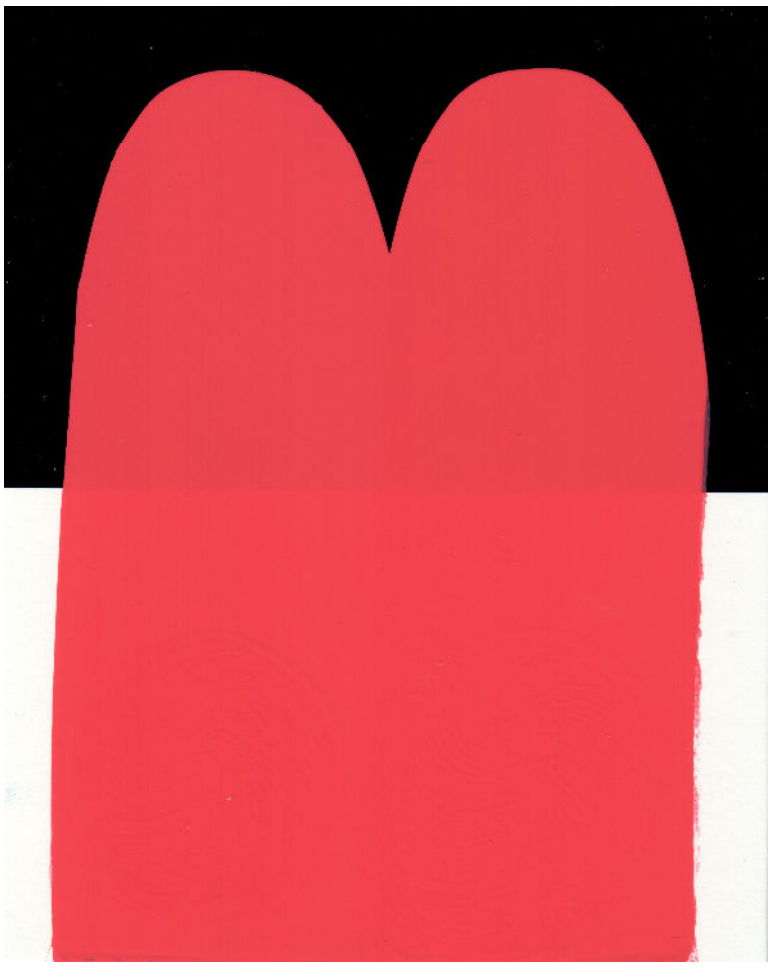


Water-based VA/VeoVa white 1:19



Pearl mill Dissolver

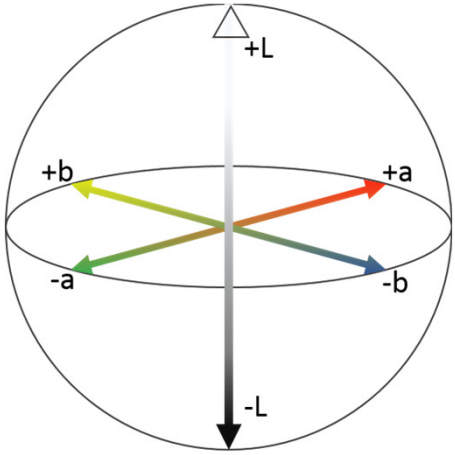
Solvent-based long-oil alkyd white 1:3



Pearl mill Dissolver

Pearl mill vs Dissolver

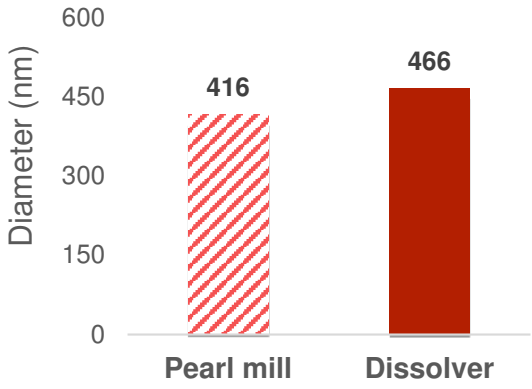
Colour development - Tinting



Water-based	L	a	b
Pearl mill	60.0	43.6	8.0
Dissolver	60.0	43.7	8.3
Δ	0.0	0.1	0.3
	ΔE = 0.3		

Solvent-based	L	a	b
Pearl mill	47.8	59.0	20.2
Dissolver	48.0	58.7	20.1
Δ	0.2	-0.3	-0.1
	ΔE = 0.4		

Pigment particle size (nm)

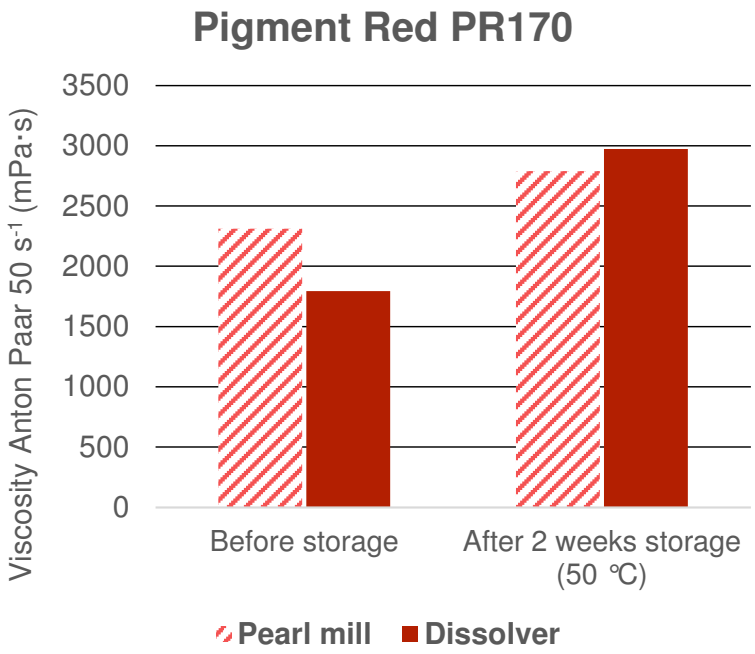


Excellent colour development with pigment concentrate prepared with dissolver:

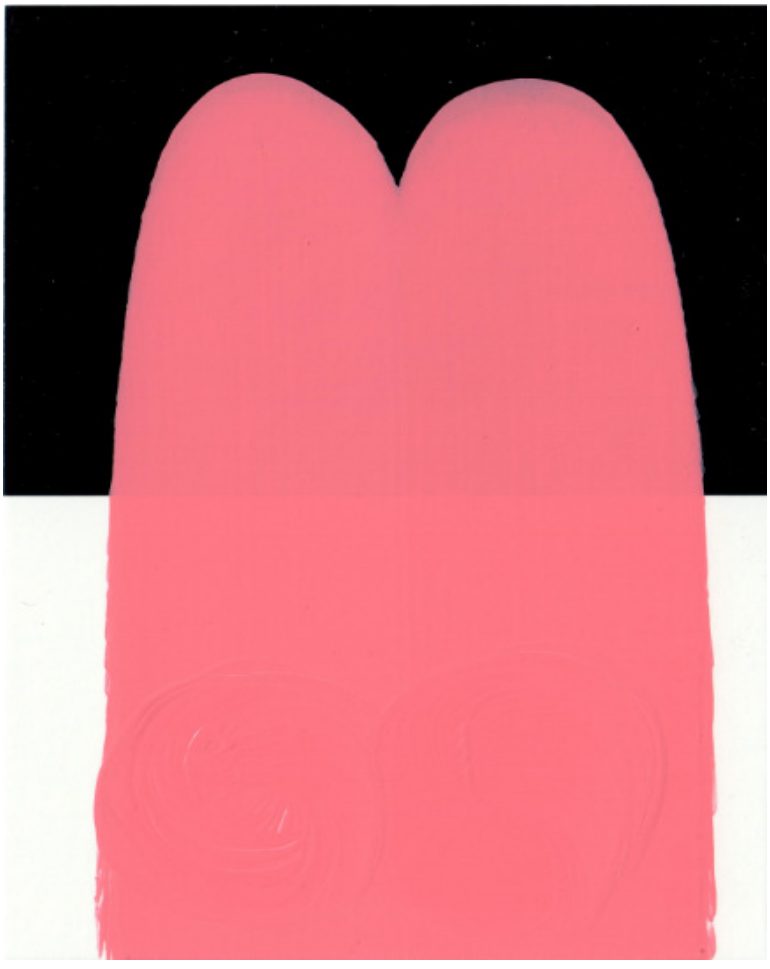
- ✓ No reduction in colour strength
- ✓ Similar redness with pigment concentrate prepared with a dissolver
- ✓ Similar pigment particle sizes achieved

Pearl mill vs Dissolver

Storage stability



Colour difference after storage 2 wks 50 °C



Before storage - Dissolver

After storage - Dissolver

	ΔE
Pearl mill	1.3
Dissolver	0.9

Excellent storage stability with pigment concentrate prepared with dissolver:

- ✓ Less difference in colour development with dissolver
- ✓ No sedimentation
- ✓ No serum

Universal pigment concentrate PB15:3

The pigment preparations that are formulated using ADDISP™ ECO can be used for solvent-borne, water-borne and UV applications. Preparation of PB15:3 pigment concentrate using a dissolver is shown below.

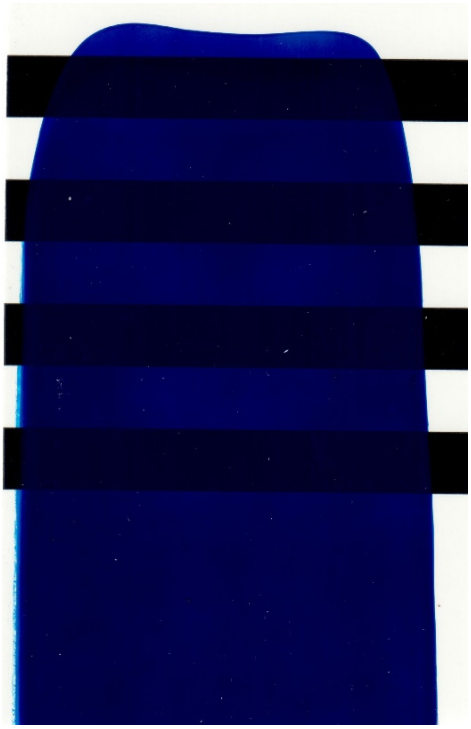
Sudafast Blue 2784		
1	Demineralised water	30.0
2	**ADDISP™ ECO**	15.0
3	Foamstop™ SX 47	0.2
4	Pigment	35.0
↓	***Disperse at high speed, 3000 RPM (≥6.3 m/s)***	
5	Demineralised water	19.7
6	Biocide	0.1
	Total	**100.0**

Properties	
Hegman fineness (µm)	**0-5**
Particle size - DLS (nm)	**168**
Viscosity Anton Paar (mPa·s)	**683**

Using the universal pigment concentrate enables the preparation of water-based and synthetic paints.

Water-based paint		
1	ADDISP™ ECO pigment concentrate	24.0
2	Component A – WB PU binder	56.0
3	Component B – NCO hardener	20.0
	Total	**100.0**

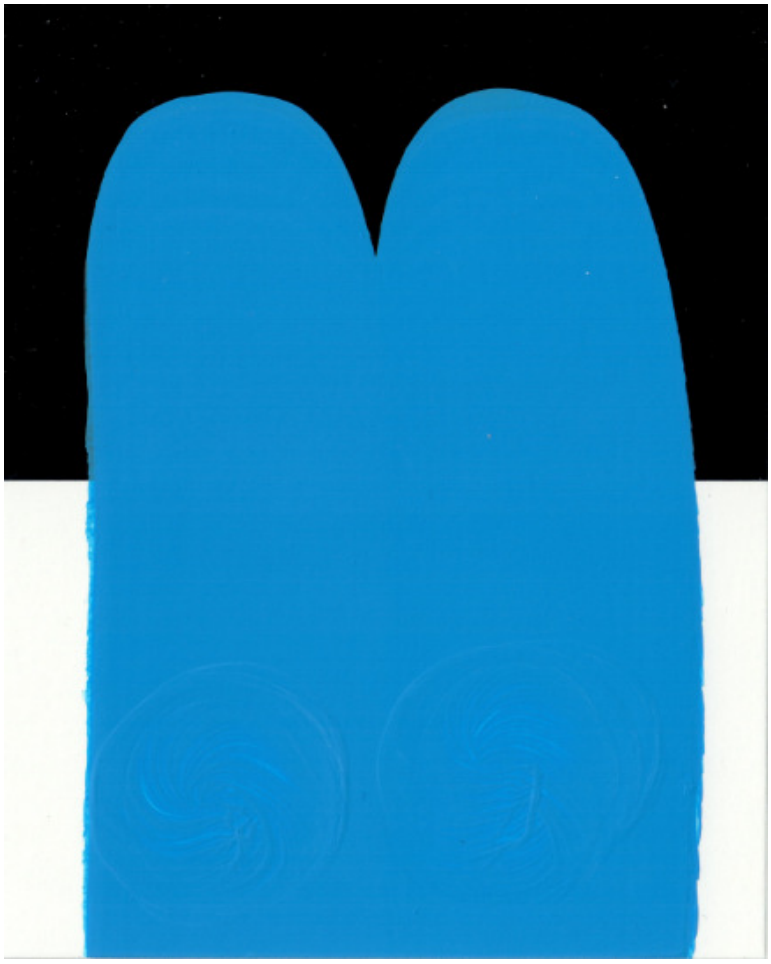
Solvent-based paint		
1	ADDISP™ ECO pigment concentrate	30.0
2	Synthetic transparent alkyd resin	70.0
	Total	**100.0**



Pearl mill vs Dissolver

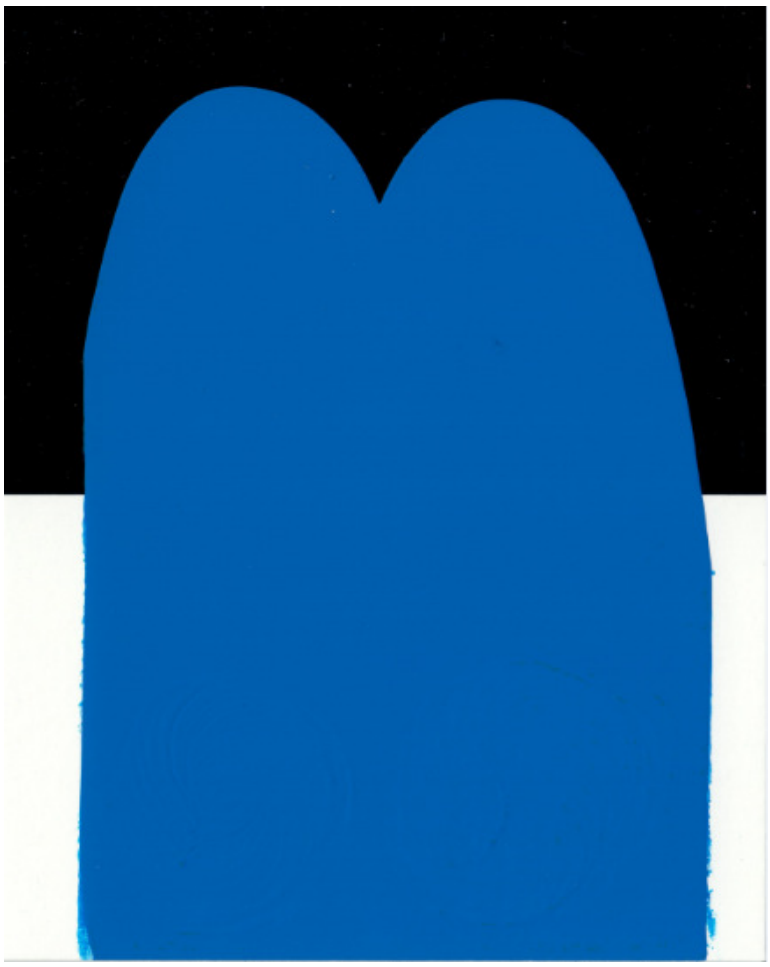
Colour development - Tinting

Water-based VA/VeoVa white 1:19

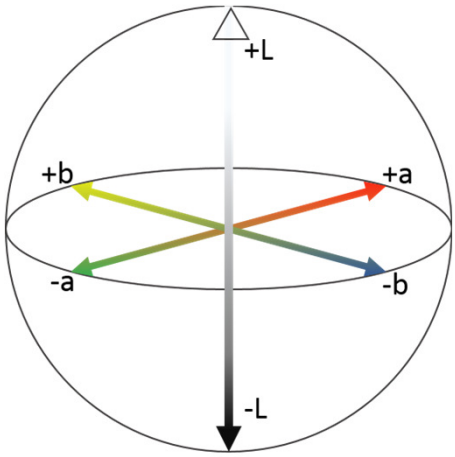


Pearl mill Dissolver

Solvent-based long-oil alkyd white 1:3



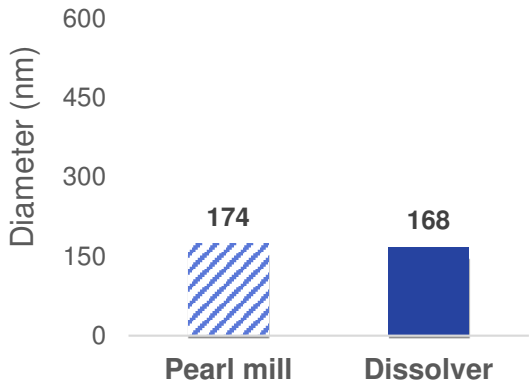
Pearl mill Dissolver



Water-based	L	a	b
Pearl mill	54.8	-19.2	-34.2
Dissolver	54.7	-19.2	-34.4
Δ	-0.1	0.0	-0.2
	ΔE = 0.2		

Solvent-based	L	a	b
Pearl mill	40.0	-18.1	-38.5
Dissolver	40.0	-18.2	-38.8
Δ	0.0	-0.1	-0.3
	ΔE = 0.3		

Pigment particle size (nm)

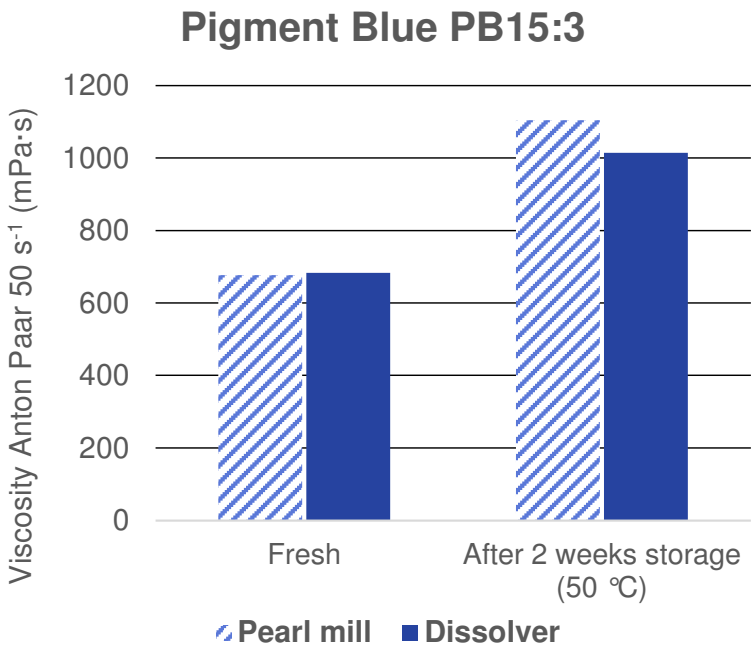


Excellent colour development with pigment concentrate prepared with dissolver:

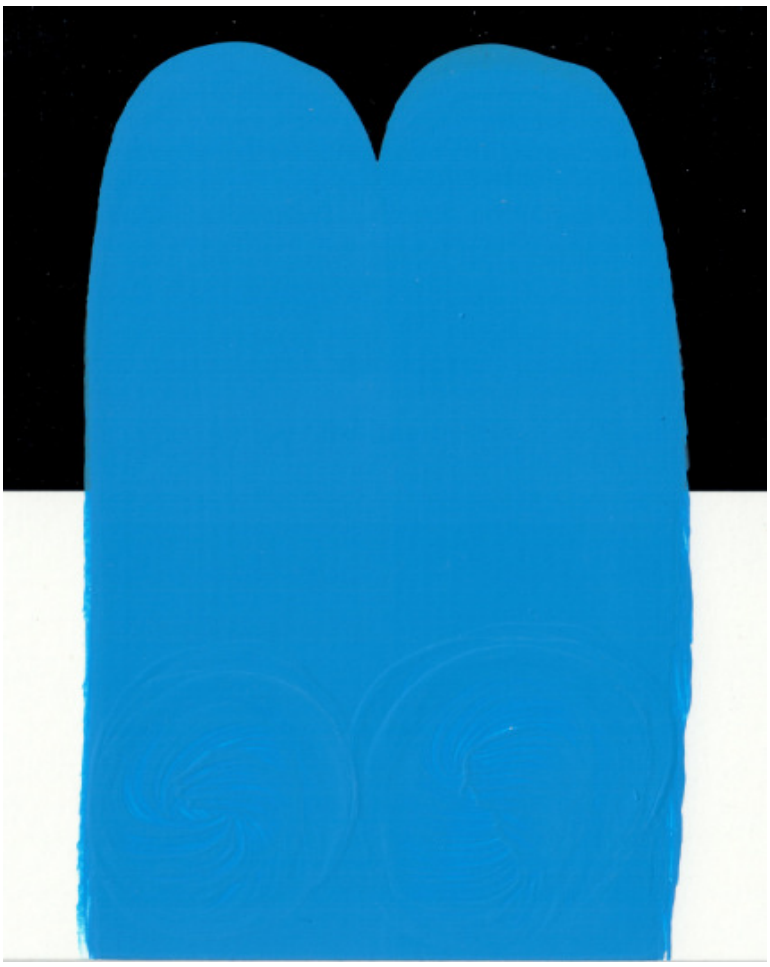
- ✓ No reduction in colour strength
- ✓ Similar blueness with pigment concentrate prepared with a dissolver
- ✓ Similar pigment particle sizes achieved

Pearl mill vs Dissolver

Storage stability



Colour difference after storage 2 wks 50 °C



Before storage - Dissolver

After storage - Dissolver

	ΔE
Pearl mill	0.1
Dissolver	0.1

Excellent storage stability with pigment concentrate prepared with dissolver:

- ✓ No difference in colour development
- ✓ No sedimentation
- ✓ No serum

Universal pigment concentrate PY74

The pigment preparations that are formulated using ADDISP™ ECO can be used for solvent-borne, water-borne and UV applications. Preparation of PY74 pigment concentrate using a dissolver is shown below.

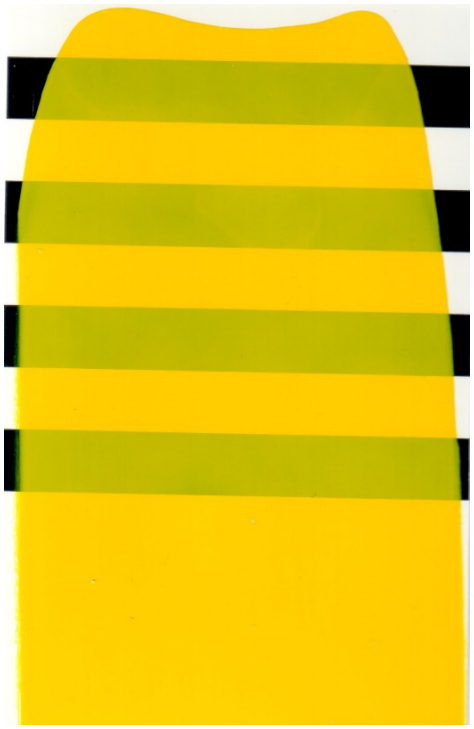
Hansa Brilliant Yellow 2GX 70-S	
1 Demineralised water	35.0
2 **ADDISP™ ECO**	20.0
3 Foamstop™ VF 35N	0.5
4 Pigment	30.0
5 Blanc fixe micro	10.0
↓ *Disperse at high speed, 3000 RPM (≥6.3 m/s)*	
6 Demineralised water	4.3
7 Biocide	0.1
Total	**100.0**

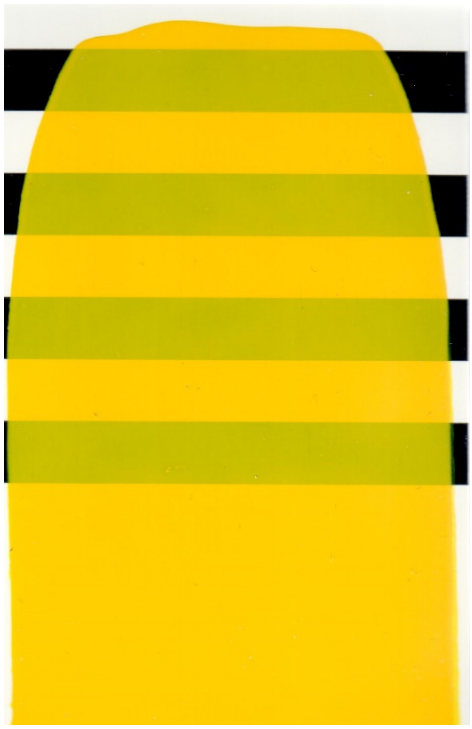
Properties	
Hegman fineness (µm)	**0-5**
Particle size by DLS (nm)	**439**
Viscosity Anton Paar (mPa·s)	**5447**

Using the universal pigment concentrate enables the preparation of water-based and synthetic paints.

Water-based paint	
1 ADDISP™ ECO pigment concentrate	24.0
2 Component A – WB PU binder	56.0
3 Component B – NCO hardener	20.0
Total	**100.0**

Solvent-based paint	
1 ADDISP™ ECO pigment concentrate	30.0
2 Synthetic transparent alkyd resin	70.0
Total	**100.0**

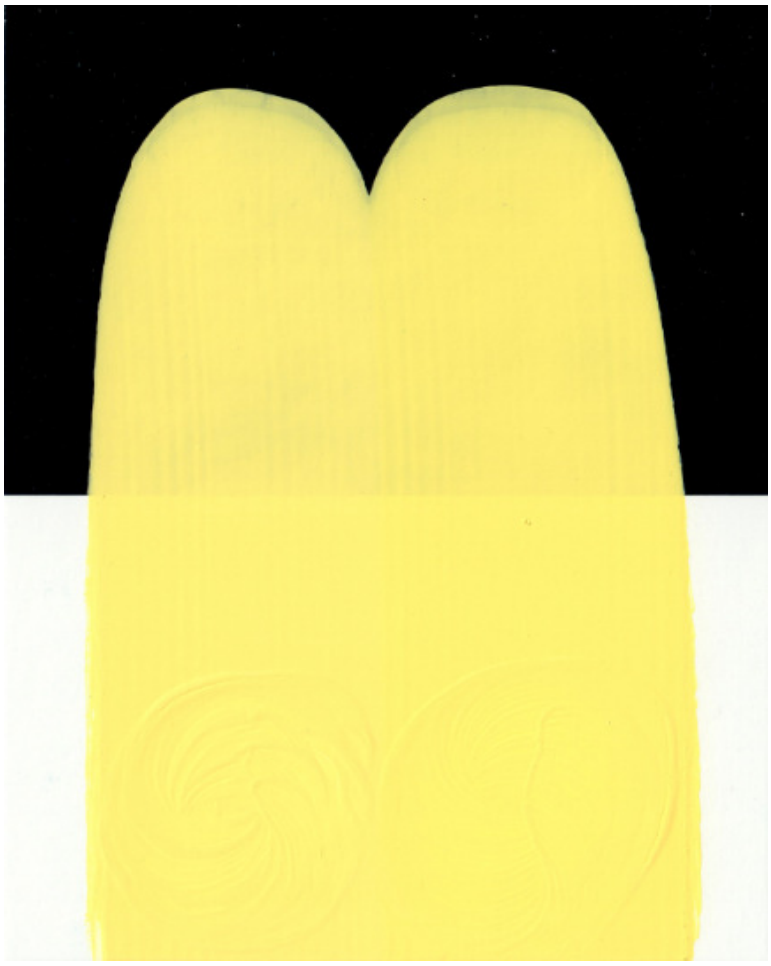




Pearl mill vs Dissolver

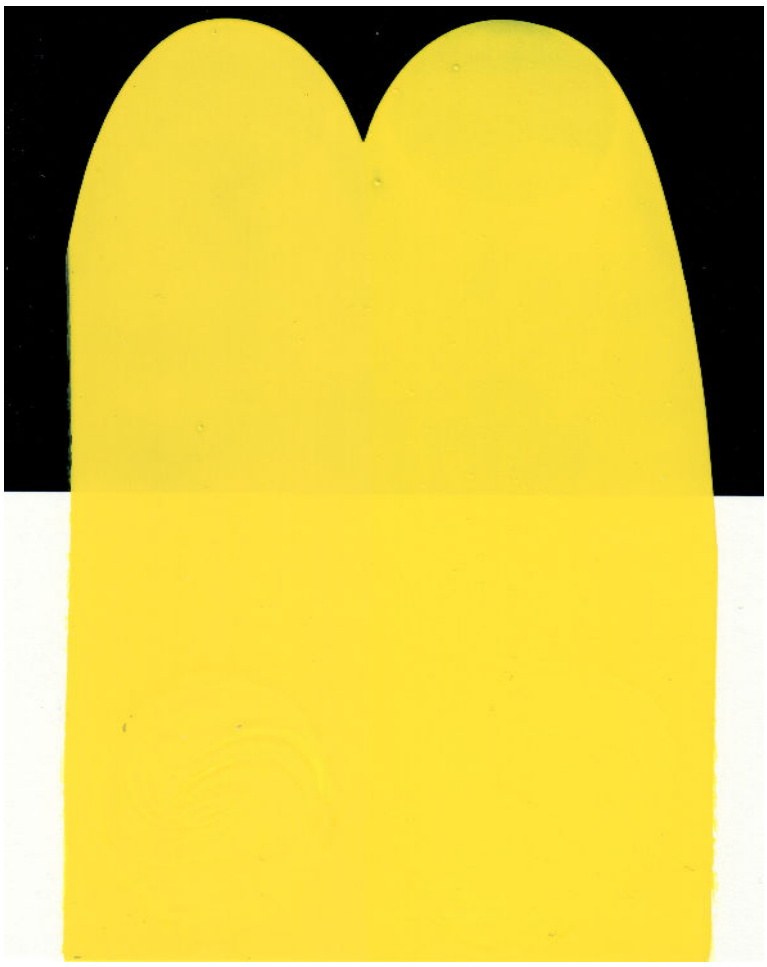
Colour development - Tinting

Water-based VA/VeoVa white 1:19

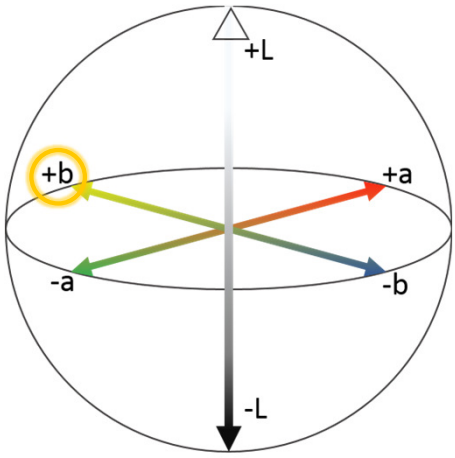


Pearl mill Dissolver

Solvent-based long-oil alkyd white 1:3



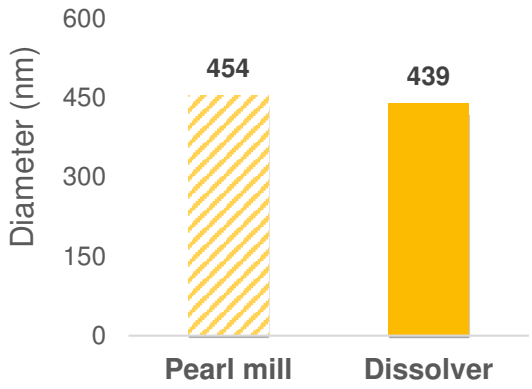
Pearl mill Dissolver



Water-based	L	a	b
Pearl mill	88.8	3.8	56.1
Dissolver	88.6	3.6	59.3
Δ	-0.2	-0.2	3.2
	ΔE = 3.2		

Solvent-based	L	a	b
Pearl mill	84.3	7.9	80.5
Dissolver	84.5	7.6	83.3
Δ	0.2	-0.3	2.8
	ΔE = 2.8		

Pigment particle size (nm)

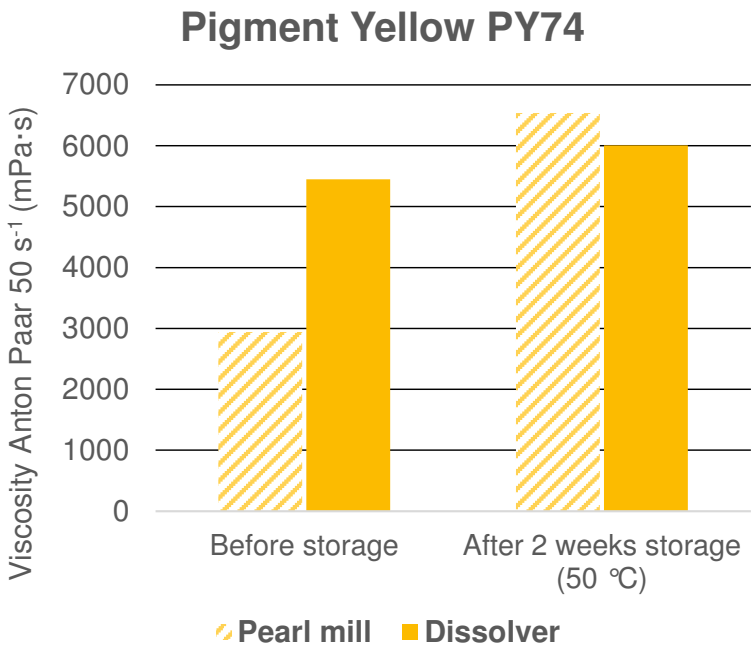


Excellent colour development with pigment concentrate prepared with dissolver:

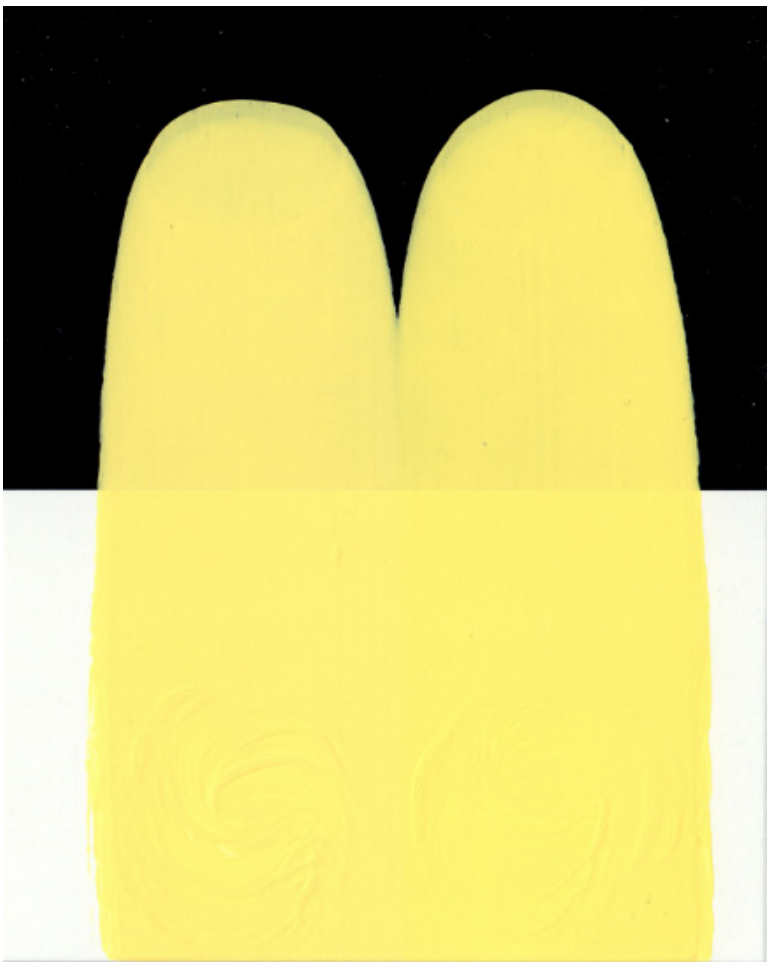
- ✓ No reduction in colour strength
- ✓ Increased yellowness with pigment concentrate prepared with a dissolver
- ✓ Similar pigment particle sizes achieved

Pearl mill vs Dissolver

Storage stability



Colour difference after storage 2 wks 50 °C



Before storage - Dissolver **After storage - Dissolver**

	ΔE
Pearl mill	0.5
Dissolver	0.2

Excellent storage stability with pigment concentrate prepared with dissolver:

- ✓ No change in viscosity
- ✓ Minimal difference in colour development
- ✓ No sedimentation
- ✓ No serum

Universal pigment concentrate PBk7

The pigment preparations that are formulated using ADDISP™ ECO can be used for solvent-borne, water-borne and UV applications. Preparation of PBk7 pigment concentrate using a dissolver is shown below.

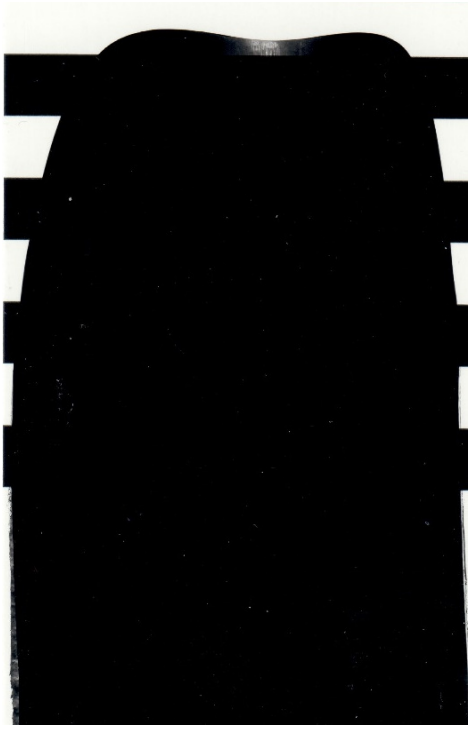
Printex G		
1	Demineralised water	40.0
2	**ADDISP™ ECO**	15.0
3	Foamstop™ SX 47	0.2
4	Pigment	25.0
↓	***Disperse at high speed, 3000 RPM (≥6.3 m/s)***	
6	Demineralised water	19.7
7	Biocide	0.1
	Total	**100.0**

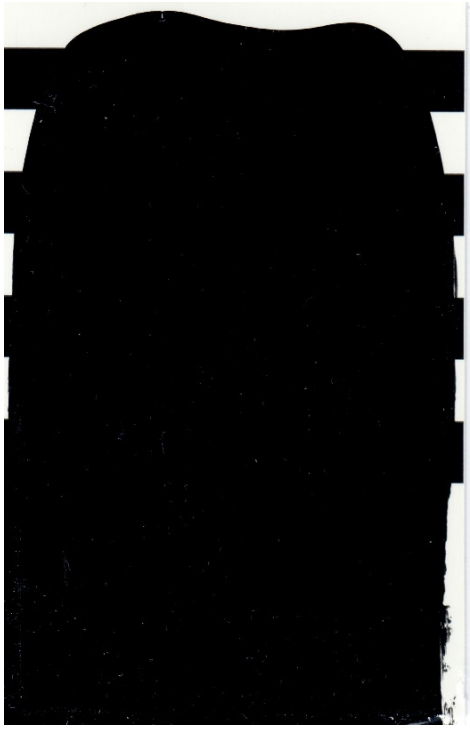
Properties	
Hegman fineness (µm)	**0-5**
Particle size by DLS (nm)	**265**
Viscosity Anton Paar (mPa·s)	**319**

Using the universal pigment concentrate enables the preparation of water-based and synthetic paints.

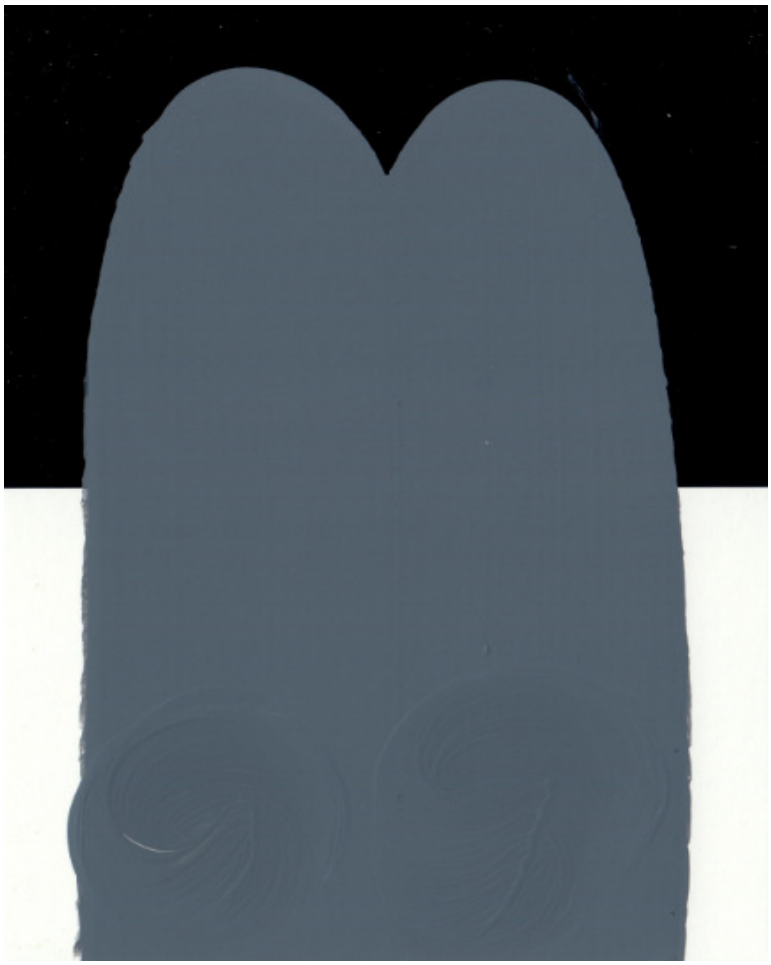
Water-based paint		
1	ADDISP™ ECO pigment concentrate	24.0
2	Component A – WB PU binder	56.0
3	Component B – NCO hardener	20.0
	Total	**100.0**

Solvent-based paint		
1	ADDISP™ ECO pigment concentrate	30.0
2	Synthetic transparent alkyd resin	70.0
	Total	**100.0**



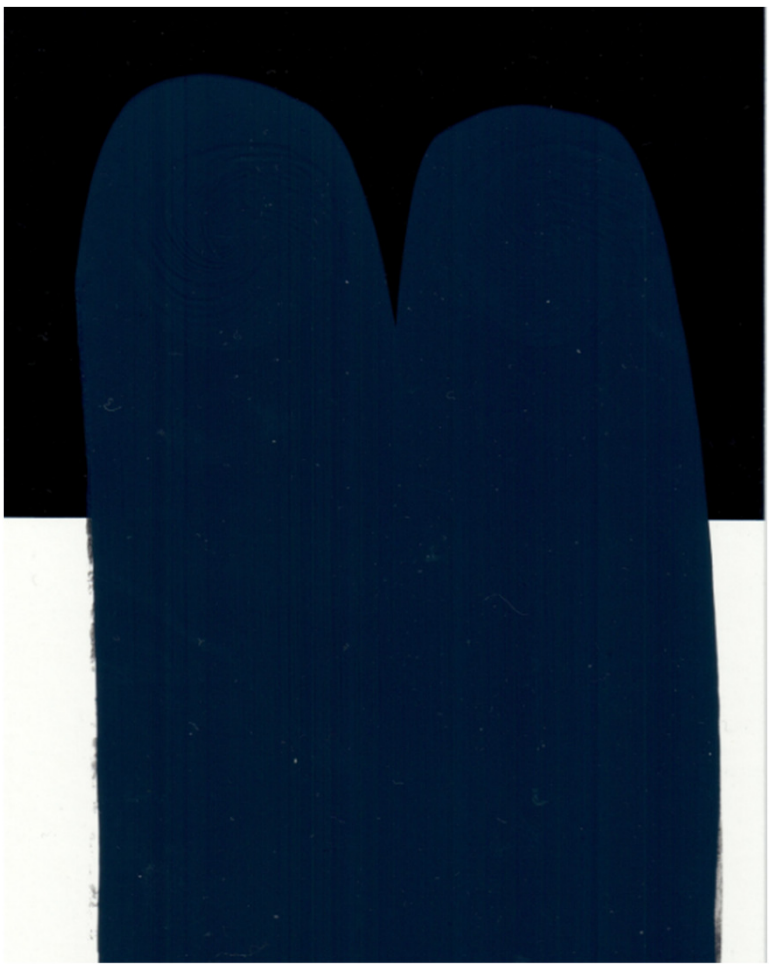


Water-based VA/VeoVa white 1:19



Pearl mill Dissolver

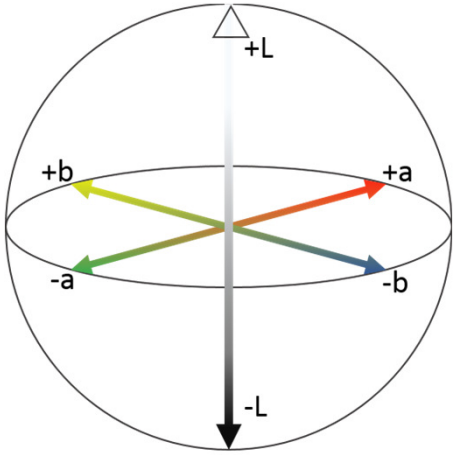
Solvent-based long-oil alkyd white 1:3



Pearl mill Dissolver

Pearl mill vs Dissolver

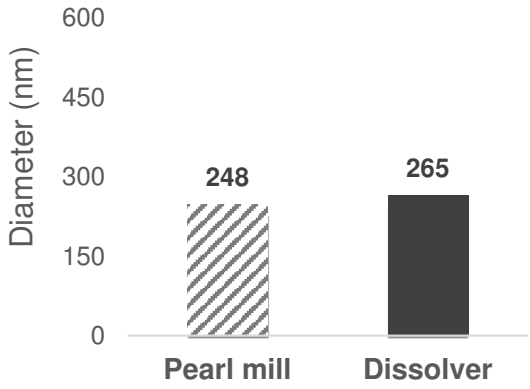
Colour development - Tinting



Water-based	L	a	b
Pearl mill	42.7	-1.0	-5.9
Dissolver	42.6	-1.0	-5.9
Δ	-0.1	0.0	0.0
	ΔE = 0.1		

Solvent-based	L	A	b
Pearl mill	20.9	-0.6	-6.3
Dissolver	20.7	-0.6	-6.4
Δ	-0.2	0.0	-0.1
	ΔE = 0.2		

Pigment particle size (nm)

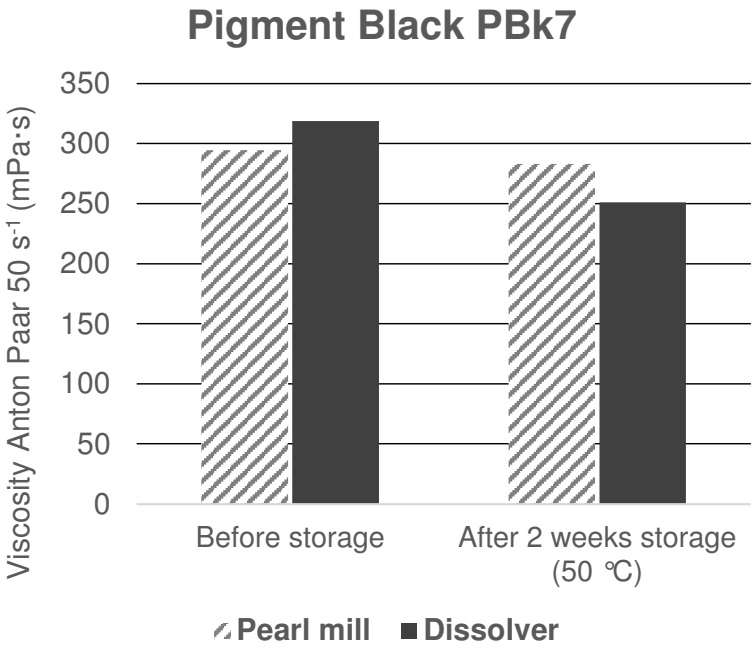


Excellent colour development with pigment concentrate prepared with dissolver:

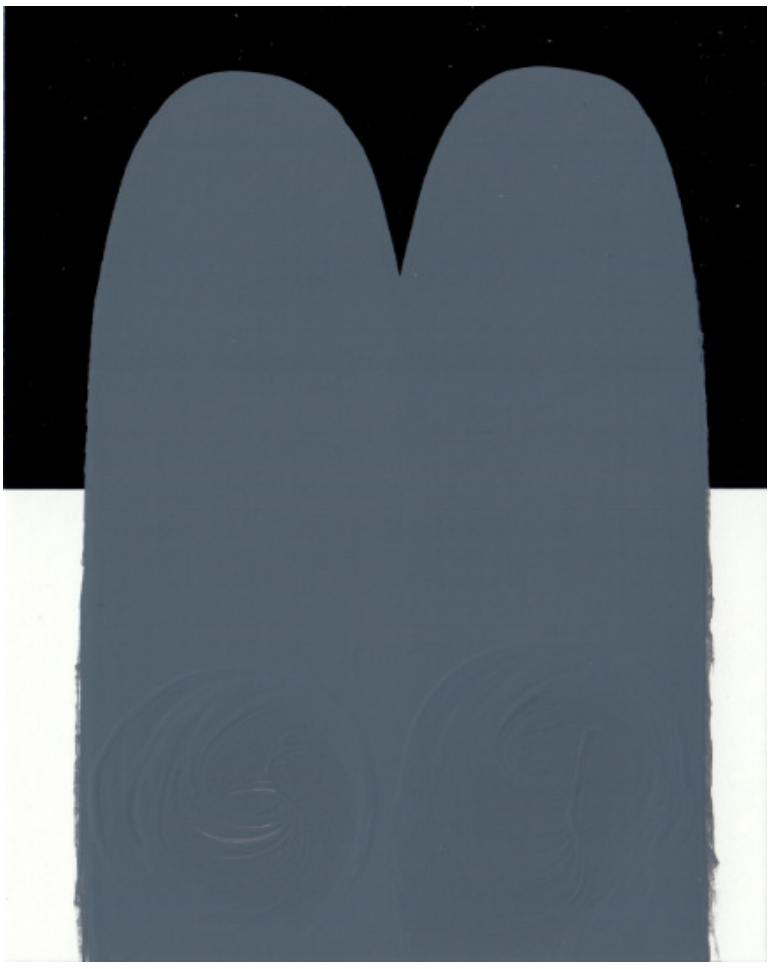
- ✓ No reduction in colour strength
- ✓ Similar pigment particle sizes achieved

Pearl mill vs Dissolver

Storage stability



Colour difference after storage 2 wks 50 °C



Before storage - Dissolver

After storage - Dissolver

	ΔE
Pearl mill	0.1
Dissolver	0.2

Excellent storage stability with pigment concentrate prepared with dissolver:

- ✓ No change in viscosity
- ✓ Minimal difference in colour development
- ✓ No sedimentation

ADDISP™ ECO Starting point formulations

Universal pigment concentrates

ADDAPT Chemicals BV

		Printex G	Tronox CR-826	Bayferrox 130 M	Sudaperm Red 2963C	Bayferrox 3920	Hansa Brilliant Yellow 2GX 70-S	Sudafast Green 2727C	Sudafast Blue 2784
	Colour index	**PBK7**	**PW6**	**PR101**	**PR170**	**PY42**	**PY74**	**PG7**	**PB15:3**
1	Demineralised water	35.2	26.8	20.0	33.5	20.0	29.0	25.0	32.0
2	CODIS™ 95		0.1					0.2	
3	**ADDISP™ ECO**	10.0	2.0	7.0	15.0	7.0	15.0	20.0	12.0
4	BioFlow™ 71						1.0		
5	Foamstop™ VF 41N	0.3	0.1	0.2	0.2	0.2	0.2	1.3	0.3
6	Pigment	30.0	70.0	68.0	25.0	54.0	40.0	30.0	35.0
7	Anti settling agent		0.6						
8	Blanc fixe micro							10.0	
9	Rheolate FX 1070					0.6			
	↓ **Disperse at high speed (≥6.3 m/s) and add extra water when necessary:**								
10	Demineralised water	11.5		4.5	7.0	8.4	14.7	13.4	2.0
11	Foamstop™ EM 19		0.3						
	↓ **After dispersing add with low speed (≥2.1 m/s):**								
12	Demineralised water	12.9			19.2	9.3			18.6
13	Anti settling agent			0.2		0.4			
14	Biocide	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
	Total	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**
	Hegman fineness (µm)	0 - 5	0 - 5	< 1	0 - 5	< 1	0 - 5	0 - 5	0 - 5

ADDISP™ ECO Starting point formulations

Miscellaneous paints and concentrates

ADDAPT Chemicals BV

Water-based paint

1	**ADDISP™ ECO pigment concentrate**	30.0
2	Water-based transparent paint	69.0
3	Rheology additive	1.0
	Total	**100.0**

Synthetic paint

1	**ADDISP™ ECO pigment concentrate**	30.0
2	Synthetic transparent resin	60.0
3	ShellSol D40	10.0
	Total	**100.0**

Silica matting agent concentrate

1	Demineralised water	80.0
2	**ADDISP™ ECO**	1.0
3	Biocide	0.2
4	Foamstop™ VF 35N	0.3
5	Lingwe S-776L	15.0
6	Anti settling agent	0.6
7	Demineralised water	3.0
	Total	**100.0**

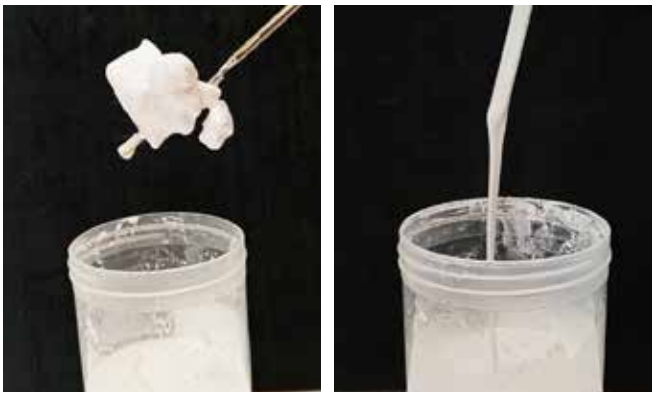
Talc filler concentrate

1	Demineralised water	49.7
2	**ADDISP™ ECO**	9.0
3	Foamstop™ SX 47	0.2
4	intalc 8 CG	40.5
5	Anti settling agent	0.6
	Total	**100.0**

Calcium carbonate filler concentrate

1	Demineralised water	20.9
2	Kimicell KEC 6000	0.2
3	CODIS™ 95	0.1
4	**ADDISP™ ECO**	2.3
5	Biocide	0.2
6	Foamstop™ VF 35N	0.2
7	Durcal 5	41.0
8	Anti settling agent	0.6
9	Styrene acrylic co-polymer binder	34.0
10	Co-solvent	0.5
	Total	**100.0**

Talc concentrates - Dispersant comparison



Competitor dispersant **ADDISP™ ECO**

Overnight stability, after stirring by hand

ADDISP ECO - Tested pigments

ADDAPT Chemicals BV

Color index	Pigment name
PW6	Kronos 2310 (TMP- and TME-free)
PW6	Tronox CR-826
PW6	Billions R-996
PW6	Billions R-895
Fillers	Intalc 8CS
Fillers	Microtalc IT Extra
Fillers	Durcal 5
Fillers	Sachtoperse HU-N
Matting agent	Lingewe S-776
PB15:1	Monolite Blue CSN-N
PB15:2	Sudafast Blue 2773
PB15:3	Monolite Blue 515303
PB15:3	Sudafast Blue 2784
PB15:4	Hostaperm Blue BT 617-D
PB15:4	Hostaperm Blue BT-617-D
PB15:4	Sudafast Blue 2796
PB28	ChromaFer Blue B33
PB29	Sudafast Blue 2662
PB29	Ultramarine Blue 26
PB36	ChromaFer Blue B22
PBk7	Beblack 5319L
PBk7	Birla Raven 1080 UP
PBk7	Birla Raven L
PBk7	Birla Raven P14R
PBk7	Birla 5000 Ultra II
PBk7	Birla 5100 Ultra
PBk7	Monarch 120
Pbk7	Printex U
PBk7	Printex G
PBk11	Bayferrox 318 BM
PG7	Heliogreen L8730
PG7	Heliogreen L8735
PG7	Pigmeron Green GFP
PG7	Sudafast Green 2727C
PG7	Subhasri Green 2528
PG17	ChromaFer Green G3M
PG17	Colortherm Green GX
PG50	ChromaFer Green G02
PO36	Sudaperm Orange 2915
PO73	Conoran Orange 5

Color index	Pigment name
PO73	Irgazin DPP Cosmoray Orange
PO73	Irgazin Orange L2990HD
PR3	Hansa Scarlet RNC
PR101	Oxired Roja malaga
PR101	Bayferrox 120M
PR101	Bayferrox 130 BM
PR101	ChromaFer Red OT-19103-130
PR101	ChromaFer Red 1130 MS
PR122	Hostaperm E-WDM250 pink
PR122	Sudaperm Pink 2997C
PR122	Sudaperm Pink 2998
PR122	Sudaperm Pink 2999
PR122	Sudaperm Pink 3000C
PR170	Sudaperm Red 2963C
PR170	Naphtol Red
PR254	Monolite Red 312202
PV15	Ultramarine Pink 19
PV19	Sudaperm Violet 2995
PV23	Sipfast RL-U
PY3	Sudacolor Yellow 109
PY42	Bayferrox 3905
PY42	Bayferrox 3910
PY42	Bayferrox 3920
PY42	ChromaFer Yellow 9910 MS
PY53	ChromaFer Yellow Y02
PY73	Hansa Brilliant Yellow 4GX
PY74	Hansa Brilliant 2GX 70-S
PY74	Sudafast Yellow 117
PY74	Lilyfast G74
PY74	Acetanil Yellow 2GO 7415C
PY83	Monolite Yellow 108304
PY110	Sudaperm Yellow 2925C
SY114	Solvaperm Yellow 2G
PY139	Sudaperm Yellow 2935
PY150	Yellow 4G
PY154	Sudaperm Yellow 2906
PY155	Paliotol Yellow D 1115 J
PY180	Benzimidazolone YH9-D
PY184	ChromaFer Yellow Y09
PY184	Durovan 5001C