ADDISP™ ECO

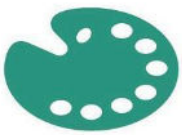
The 'One for All' Pigment Dispersant

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.

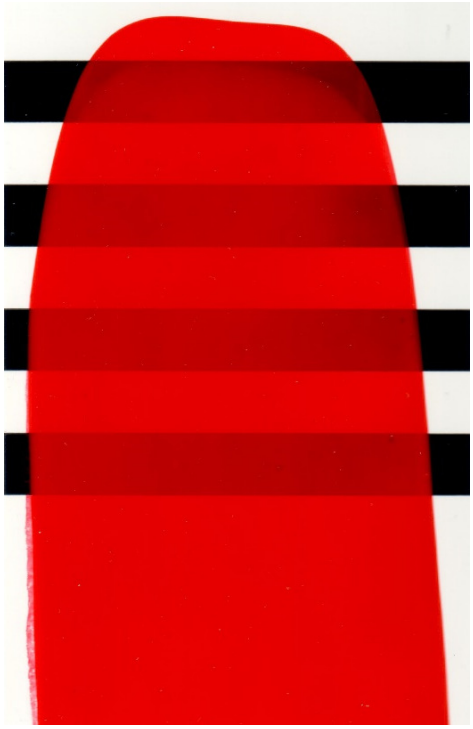
Sudaperm Red 2963C	
1 Demineralised water	33.5
2 **ADDISP™ ECO**	15.0
3 Foamstop™ SX 47	0.2
4 Pigment	25.0
↓ ***Disperse at high speed, 3000 RPM (≥6.3 m/s)***	
6 Demineralised water	26.2
7 Biocide	0.1
Total	**100.0**

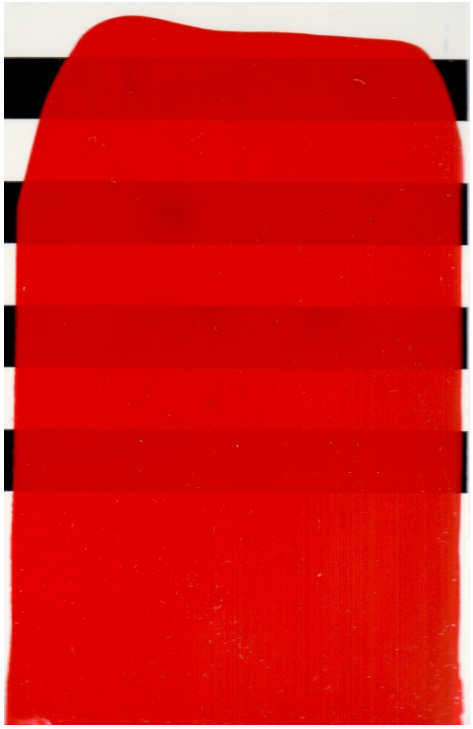
Properties	
Hegman fineness (µm)	**0-5**
Particle size by DLS (nm)	**466**
Viscosity Anton Paar (mPa·s)	**1794**

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

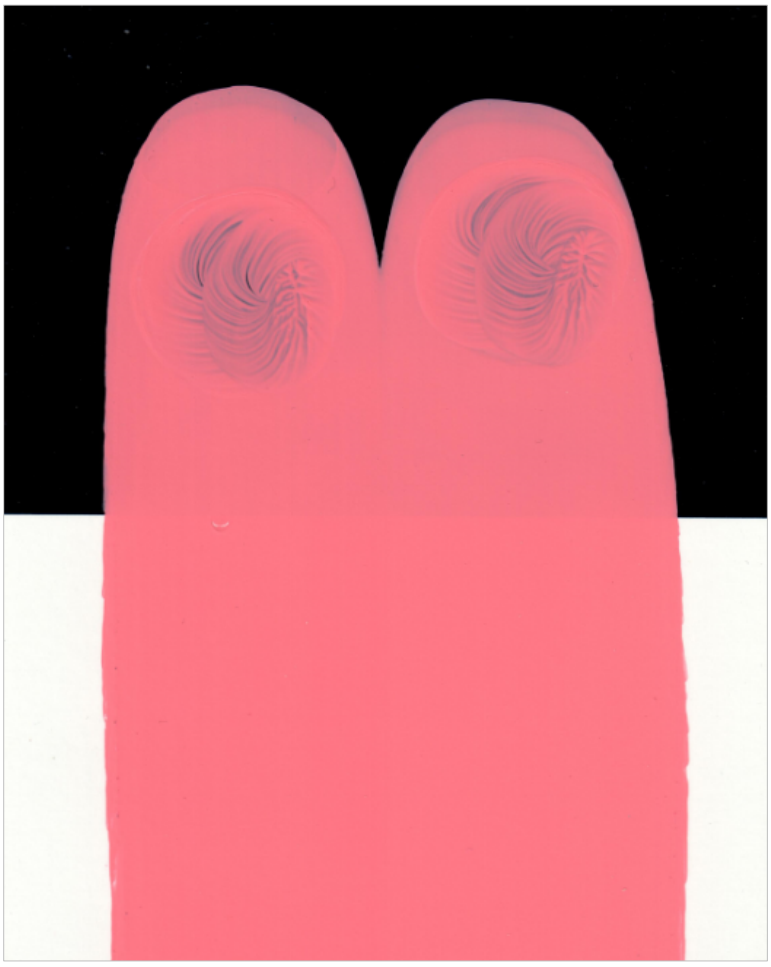
Water-based paint	
1 ADDISP™ ECO pigment concentrate	24.0
2 Component A – WB PU binder	56.0
3 Component B – NCO hardener	20.0
Total	**100.0**

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



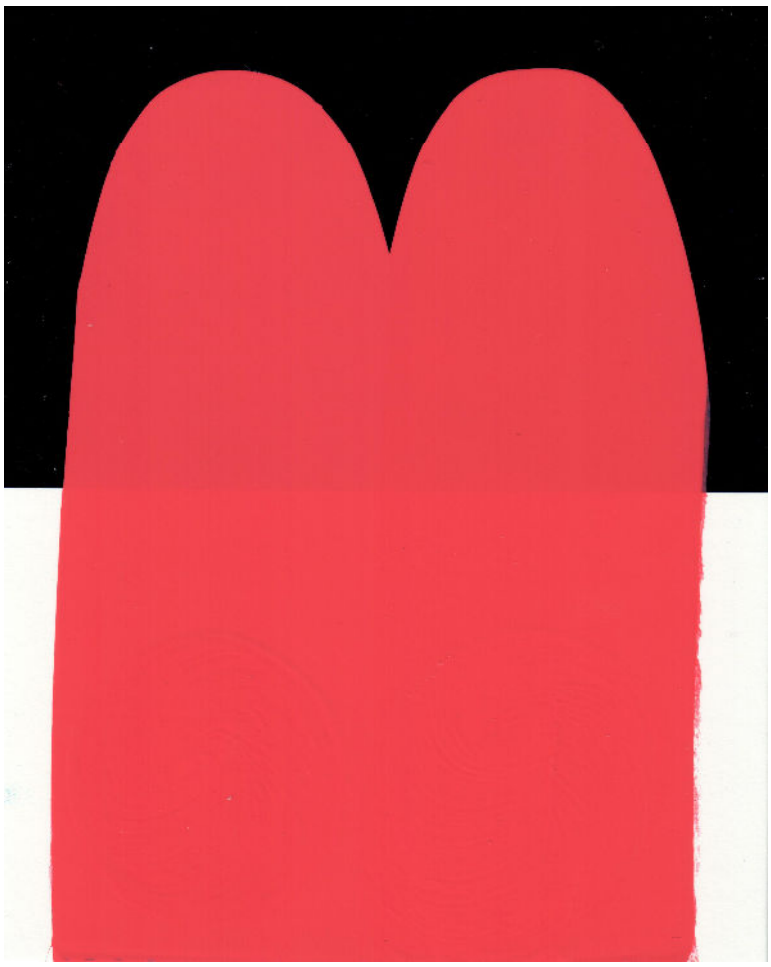


Water-based VA/VeoVa white 1:19



Pearl mill Dissolver

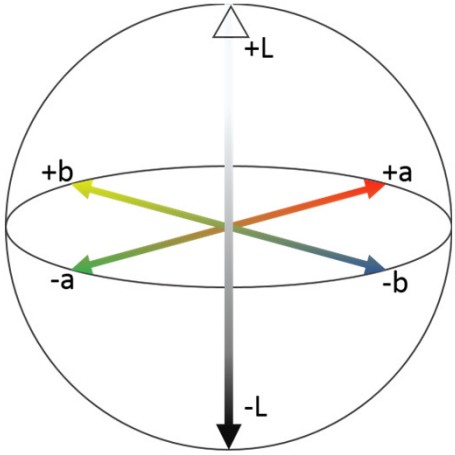
Solvent-based long-oil alkyd white 1:3



Pearl mill Dissolver

Pearl mill vs Dissolver

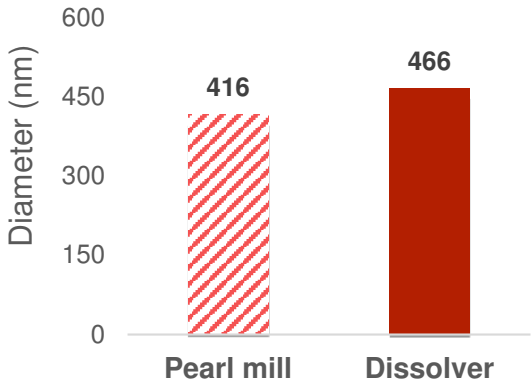
Colour development - Tinting



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)

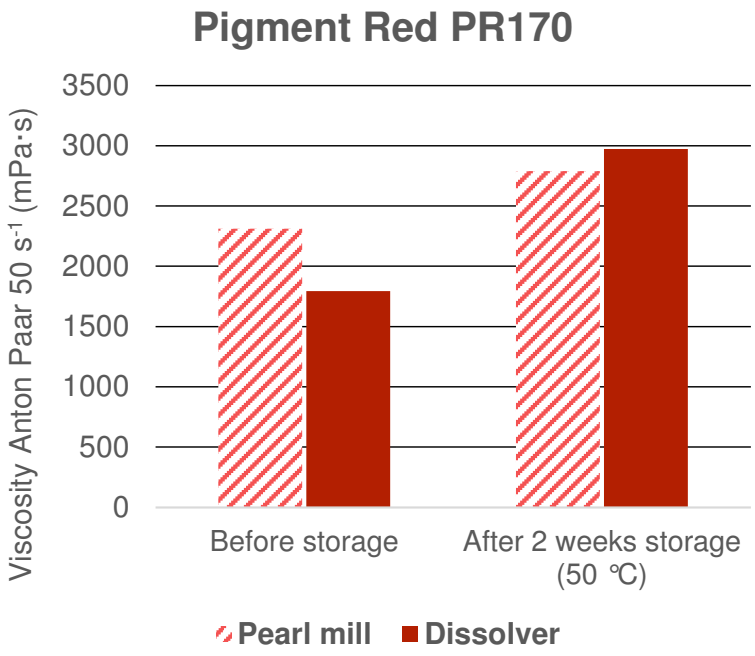


Excellent colour development with pigment concentrate prepared with dissolver:

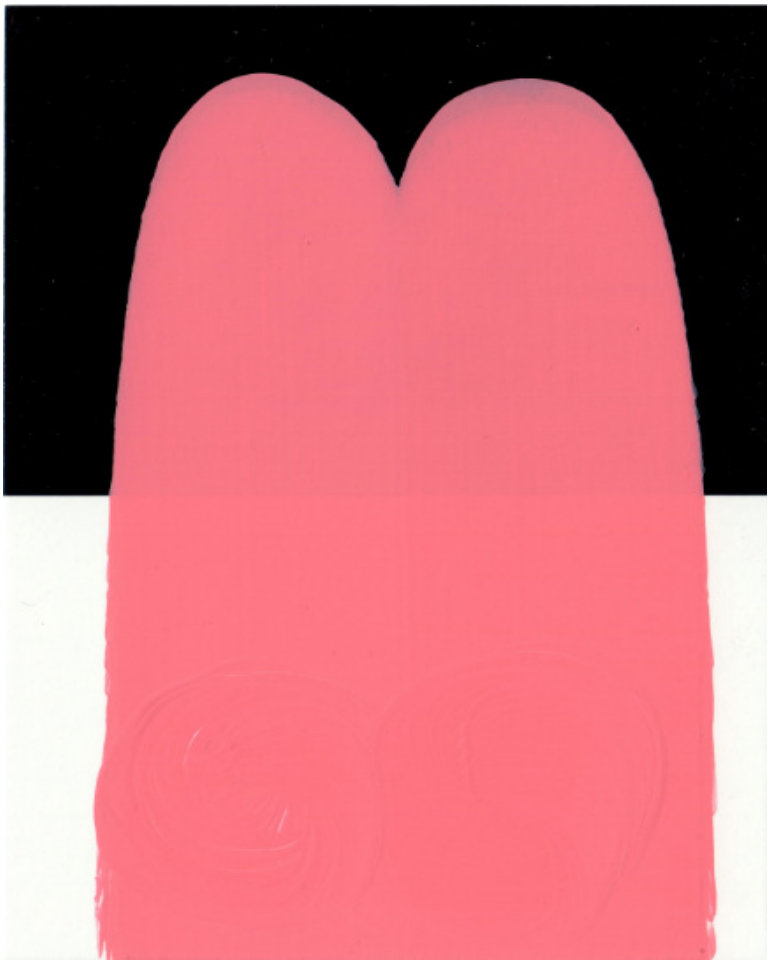
- ✓ No reduction in colour strength
- ✓ Similar redness with pigment concentrate prepared with a dissolver
- ✓ Similar pigment particle sizes achieved

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**

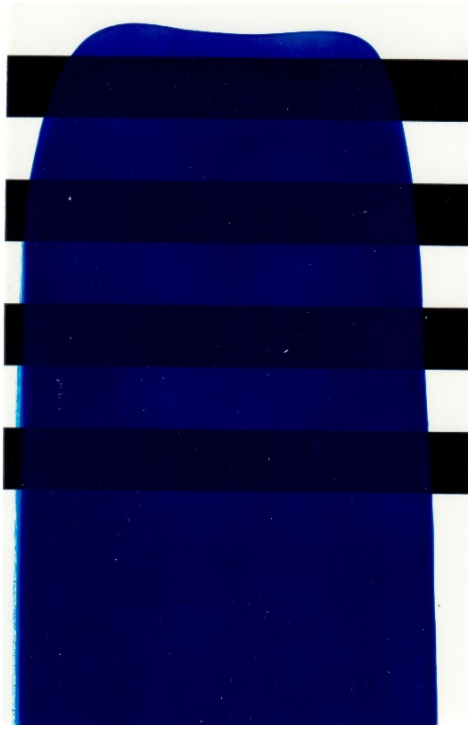
Using the universal pigment concentrate enables the preparation of water-based and synthetic paints.

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

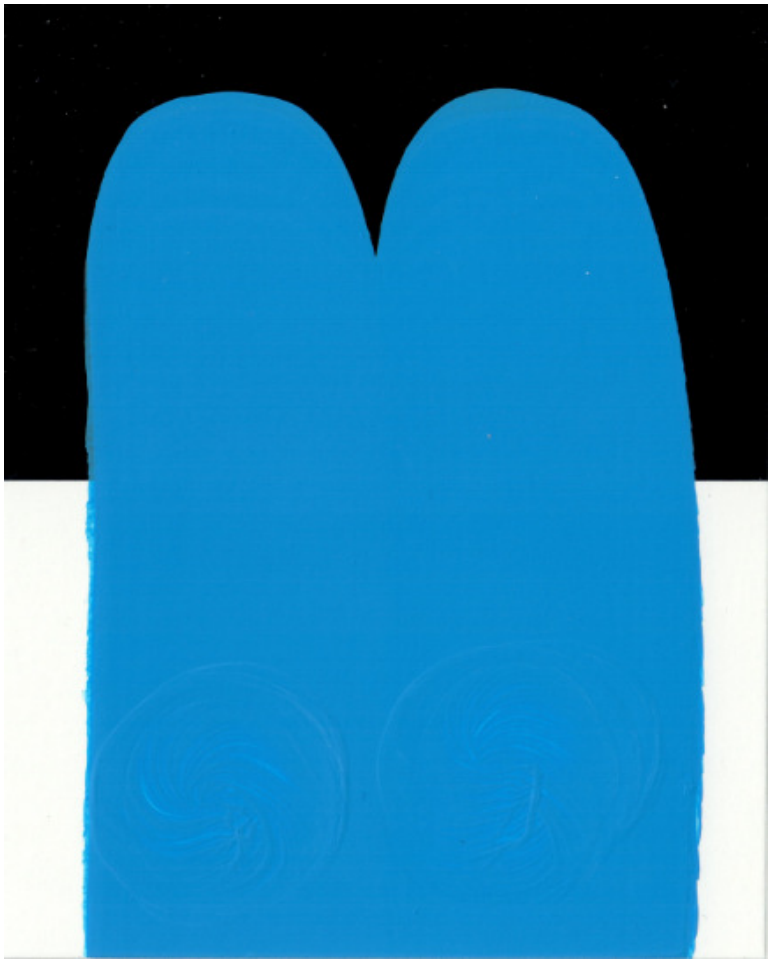
1 ADDISP™ ECO pigment concentrate	30.0
2 Synthetic transparent alkyd resin	70.0
Total	**100.0**



Pearl mill vs Dissolver

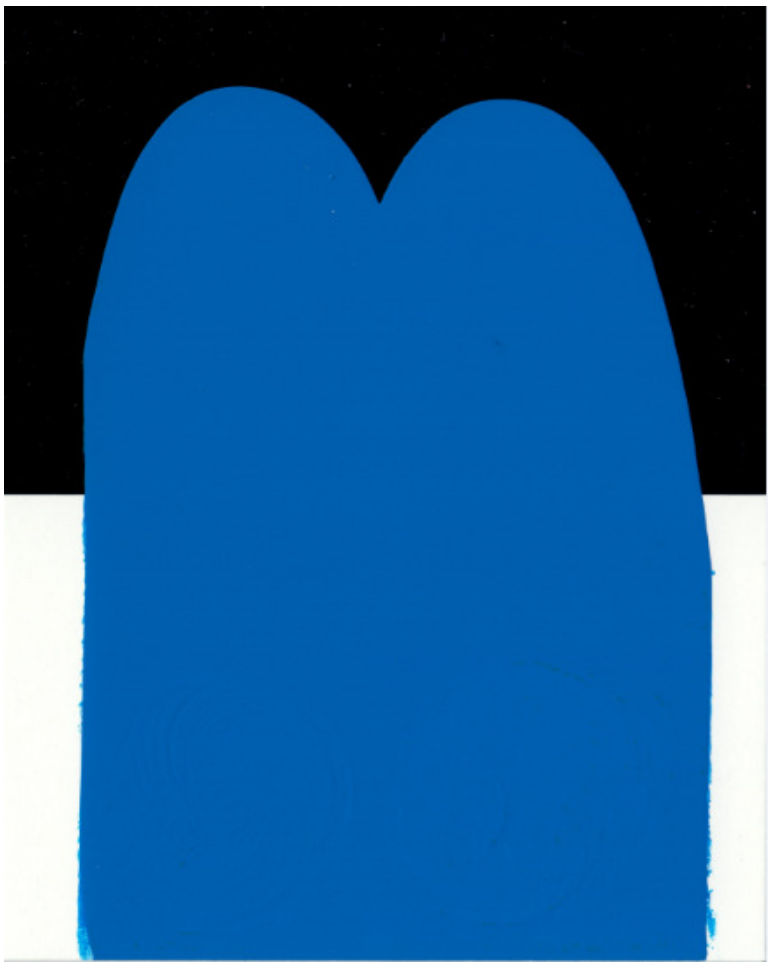
Colour development - Tinting

Water-based VA/VeoVa white 1:19

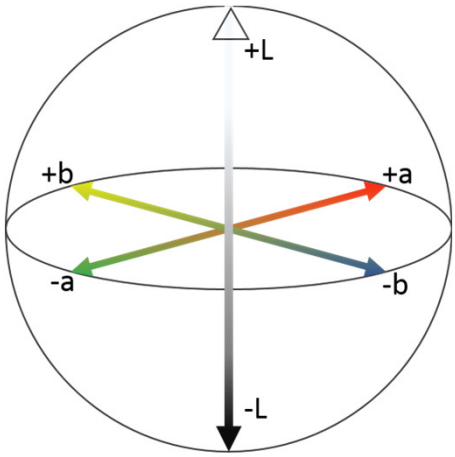


Pearl mill Dissolver

Solvent-based long-oil alkyd white 1:3



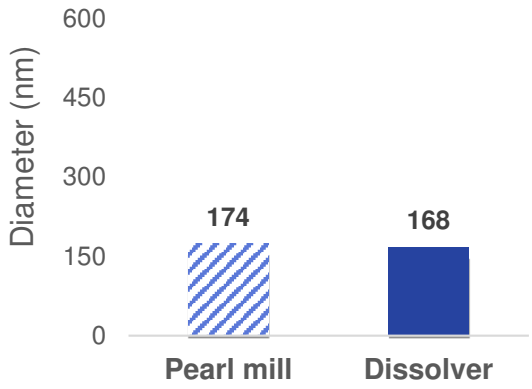
Pearl mill Dissolver



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)

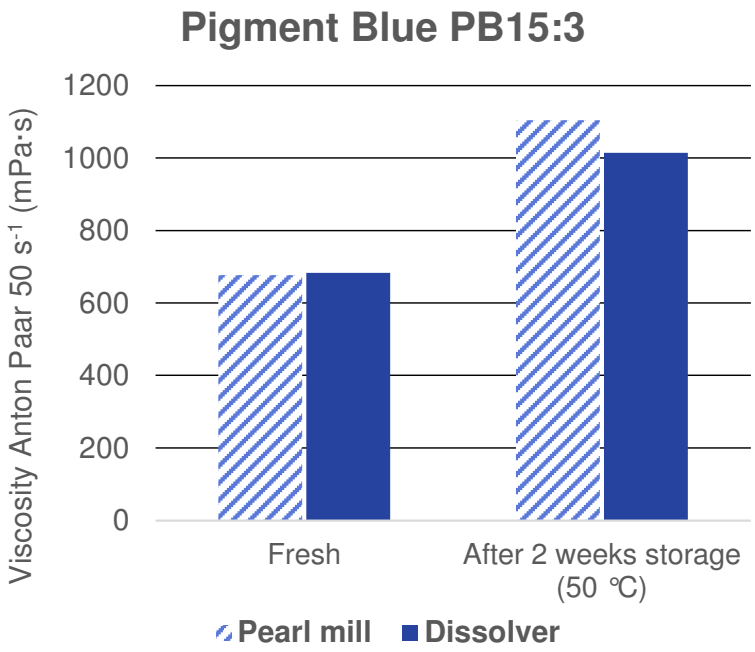


Excellent colour development with pigment concentrate prepared with dissolver:

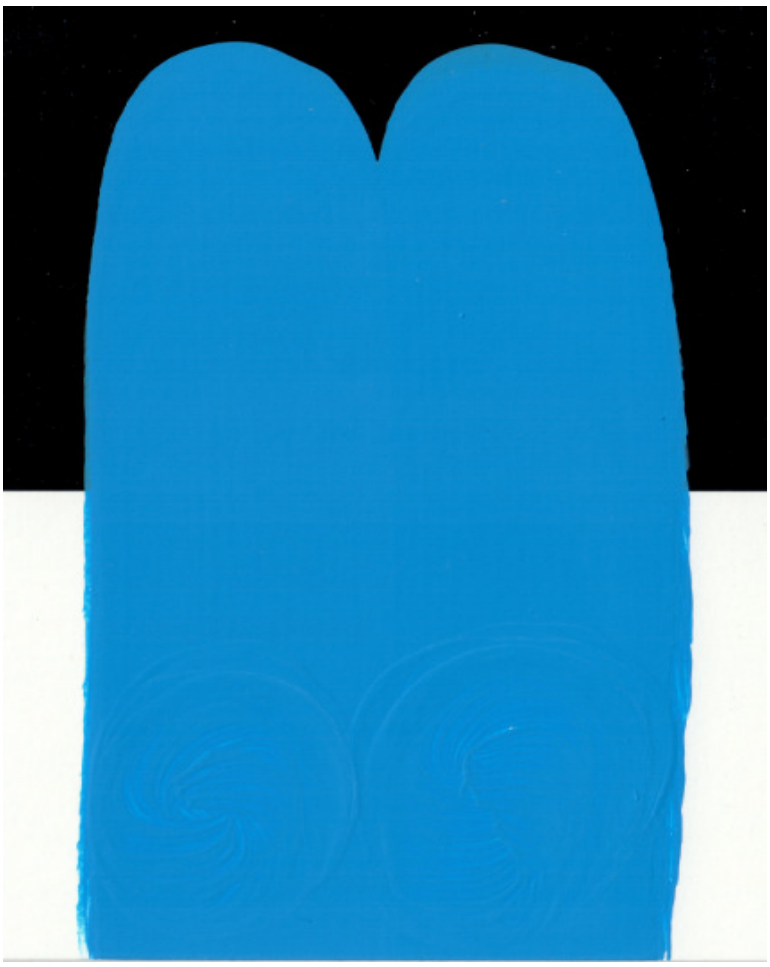
- ✓ No reduction in colour strength
- ✓ Similar blueness with pigment concentrate prepared with a dissolver
- ✓ Similar pigment particle sizes achieved

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.

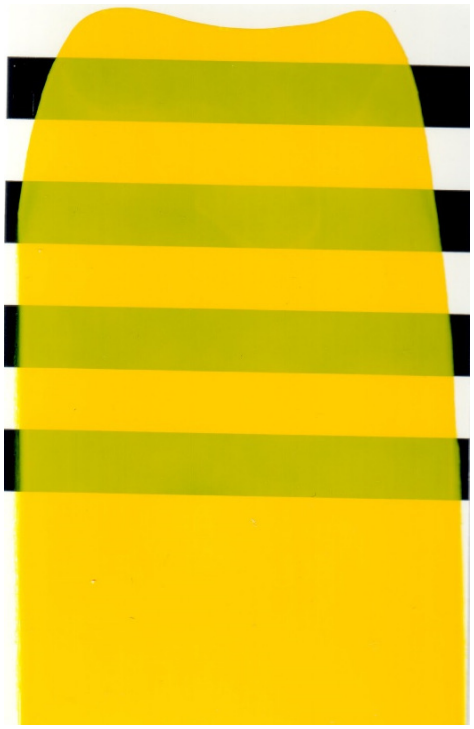
Hansa Brilliant Yellow 2GX 70-S	
1 Demineralised water	35.0
2 **ADDISP™ ECO**	20.0
3 Foamstop™ VF 35N	0.5
4 Pigment	30.0
5 Blanc fixe micro	10.0
↓ ***Disperse at high speed, 3000 RPM (≥6.3 m/s)***	
6 Demineralised water	4.3
7 Biocide	0.1
Total	**100.0**

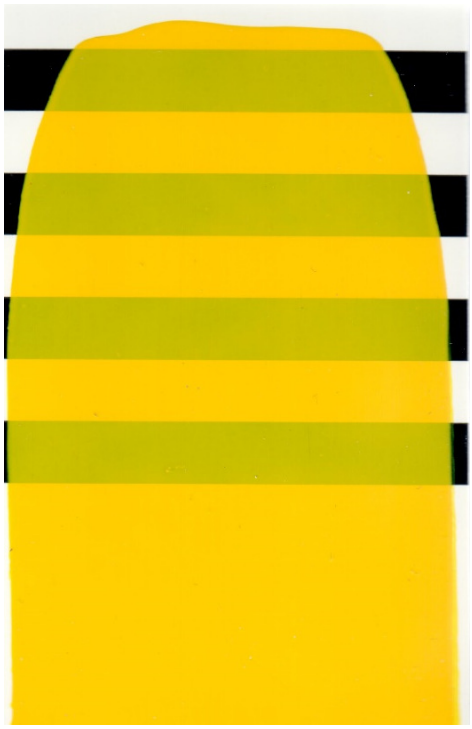
Properties	
Hegman fineness (µm)	**0-5**
Particle size by DLS (nm)	**439**
Viscosity Anton Paar (mPa·s)	**5447**

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

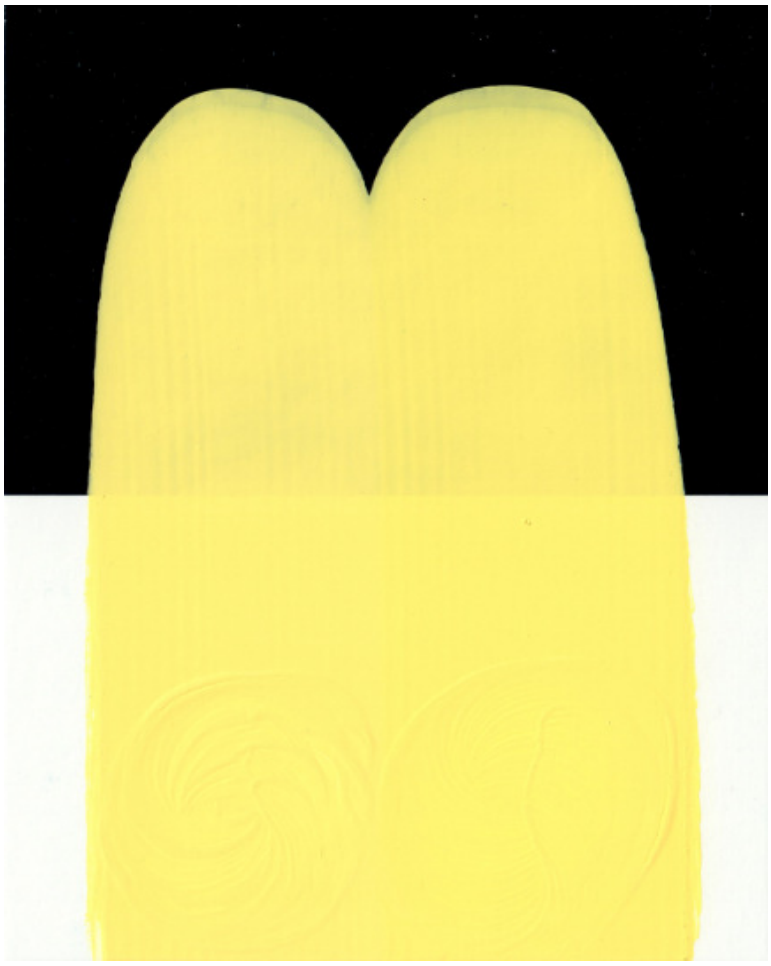
Water-based paint	
1 ADDISP™ ECO pigment concentrate	24.0
2 Component A – WB PU binder	56.0
3 Component B – NCO hardener	20.0
Total	**100.0**

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



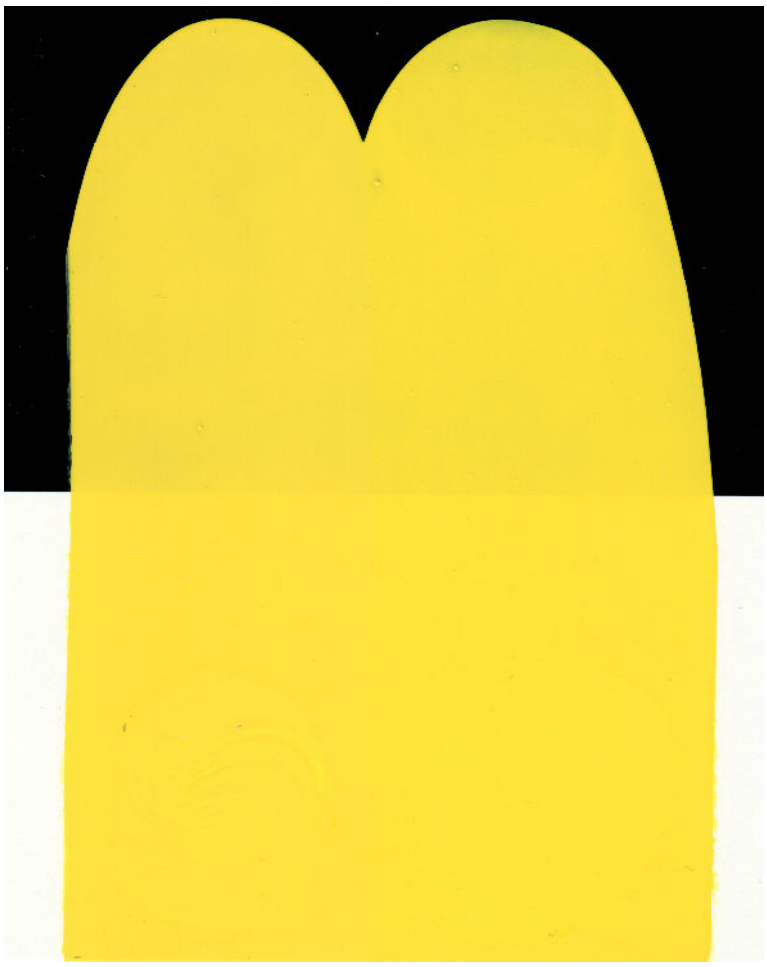


Water-based VA/VeoVa white 1:19



Pearl mill Dissolver

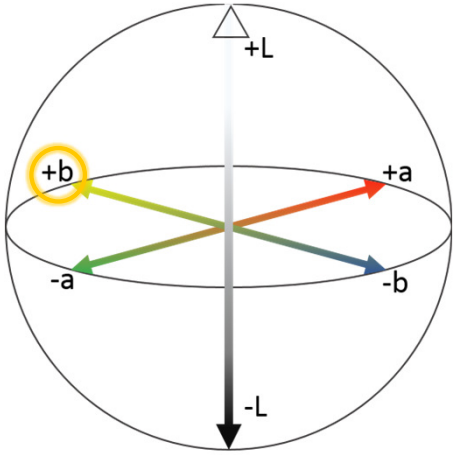
Solvent-based long-oil alkyd white 1:3



Pearl mill Dissolver

Pearl mill vs Dissolver

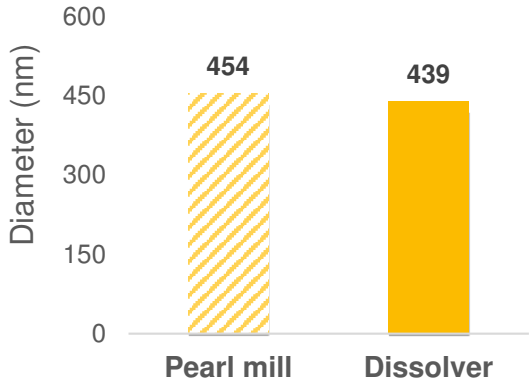
Colour development - Tinting



Water-based	L	a	b
Pearl mill	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)

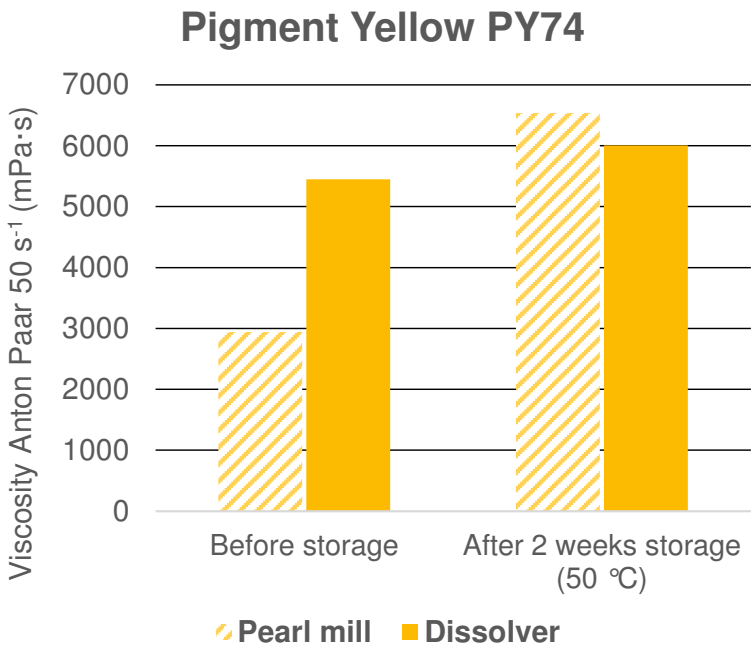


Excellent colour development with pigment concentrate prepared with dissolver:

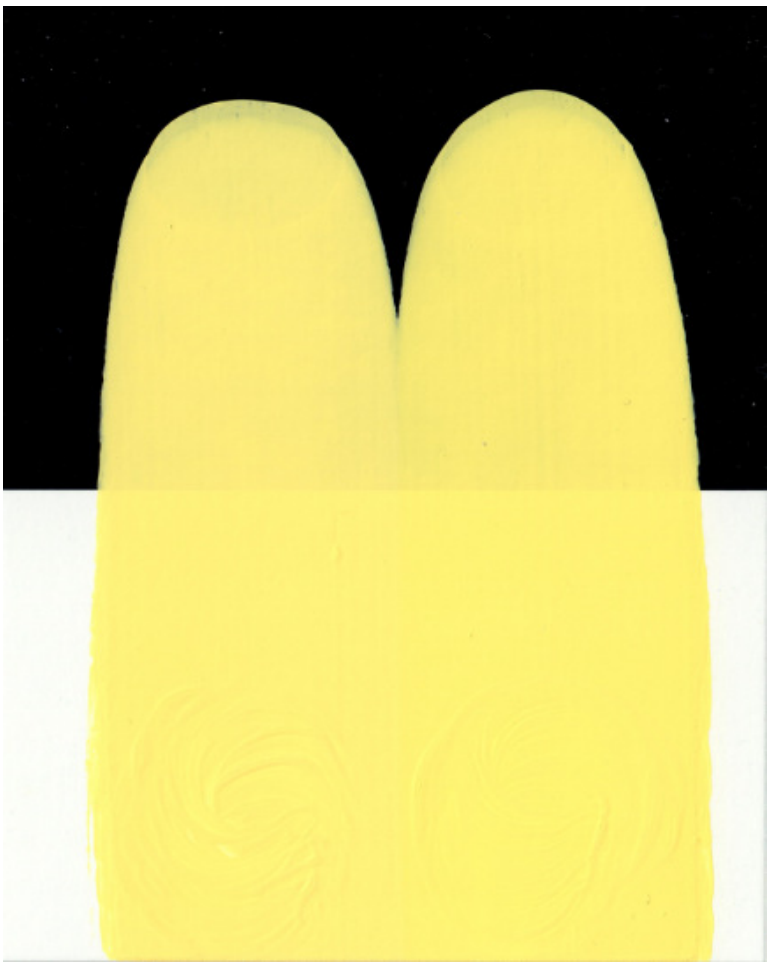
- ✓ No reduction in colour strength
- ✓ Increased yellowness with pigment concentrate prepared with a dissolver
- ✓ Similar pigment particle sizes achieved

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.

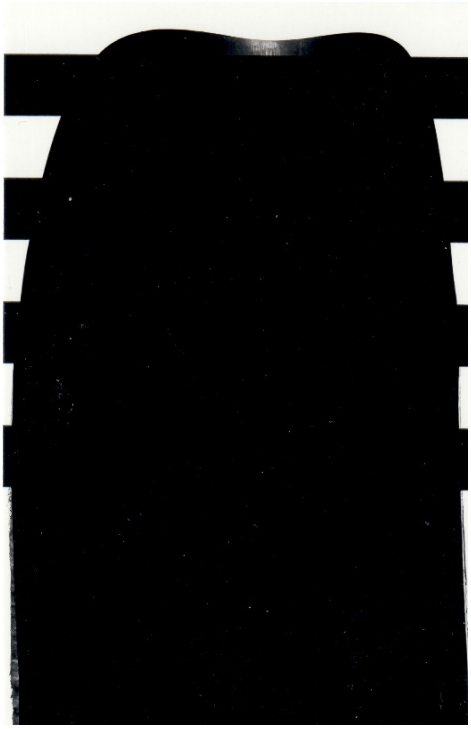
Printex G		
1	Demineralised water	40.0
2	**ADDISP™ ECO**	15.0
3	Foamstop™ SX 47	0.2
4	Pigment	25.0
↓	***Disperse at high speed, 3000 RPM (≥6.3 m/s)***	
6	Demineralised water	19.7
7	Biocide	0.1
	Total	**100.0**

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.

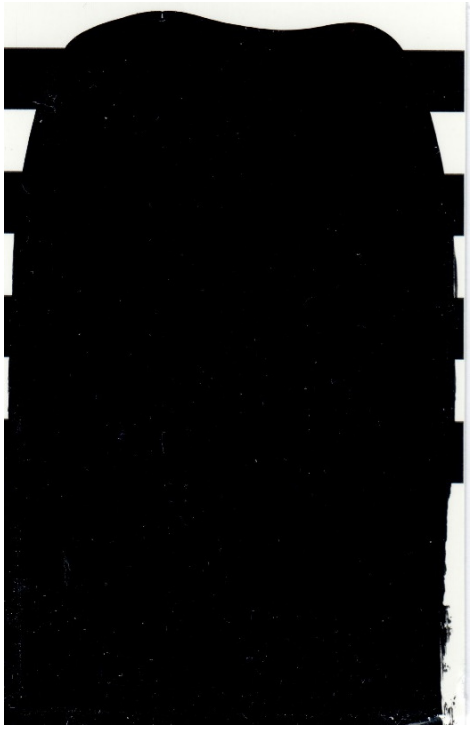
Water-based paint

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**

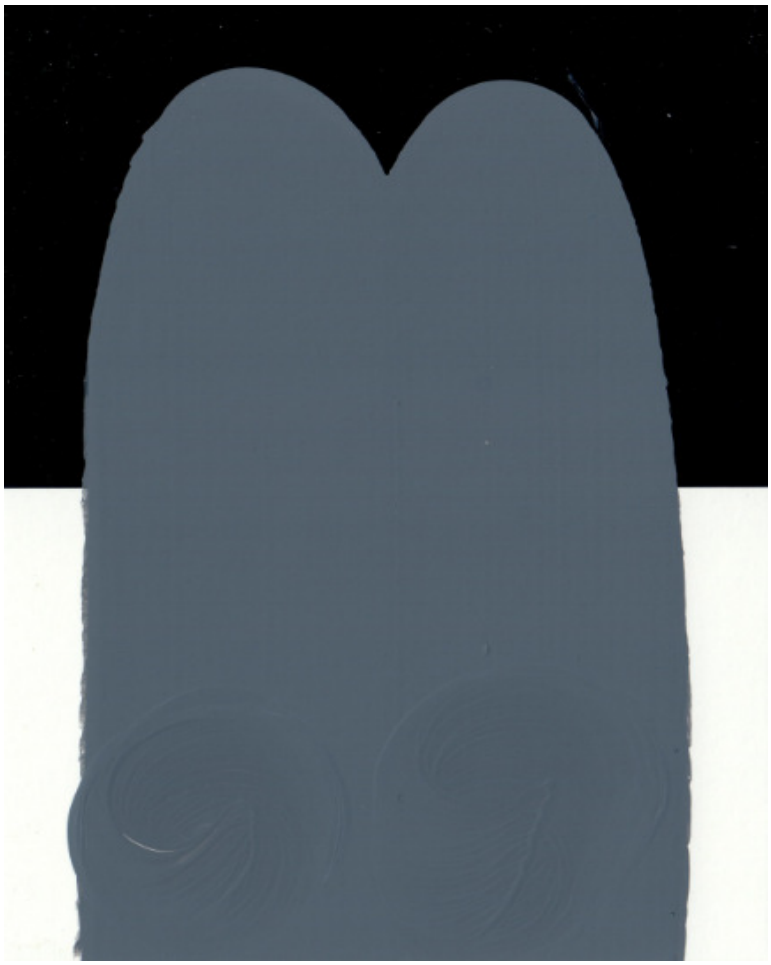


Solvent-based paint

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

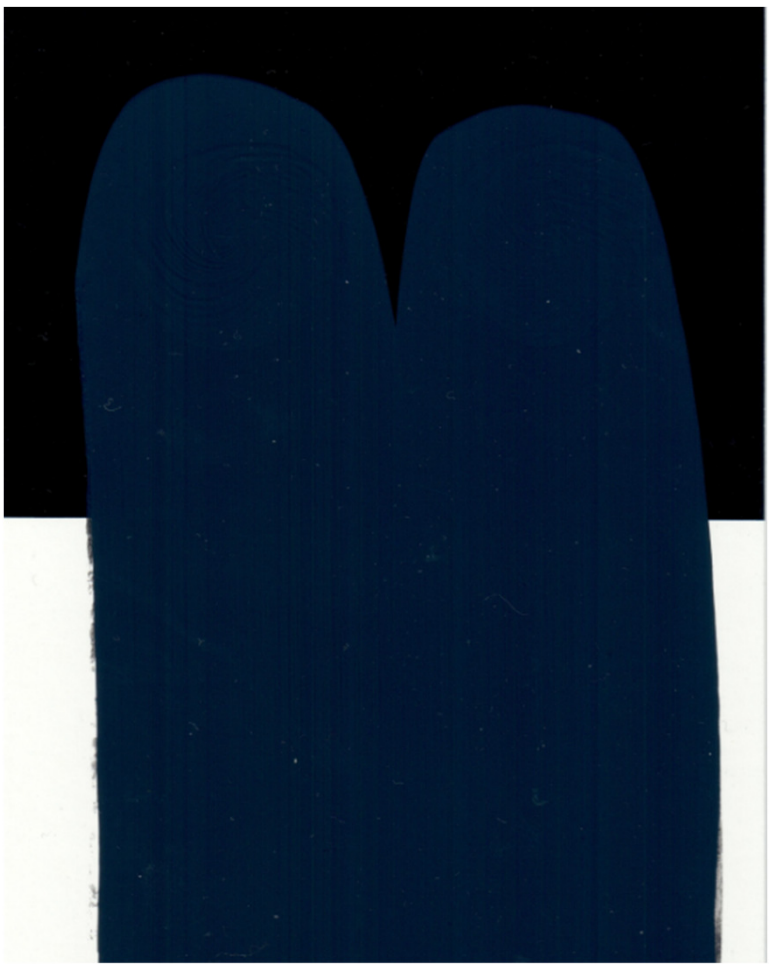


Water-based VA/VeoVa white 1:19



Pearl mill Dissolver

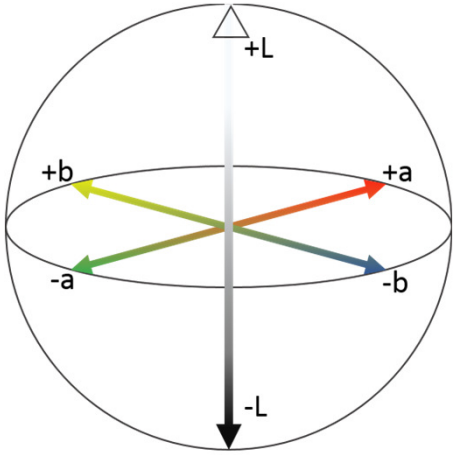
Solvent-based long-oil alkyd white 1:3



Pearl mill Dissolver

Pearl mill vs Dissolver

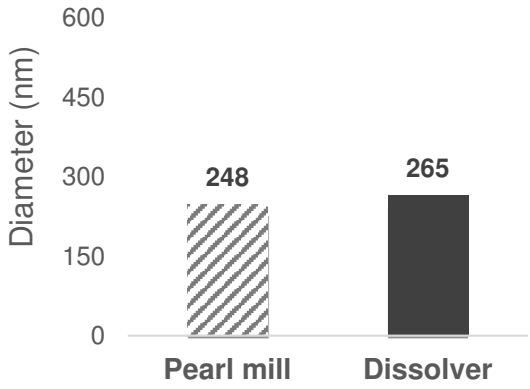
Colour development - Tinting



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)

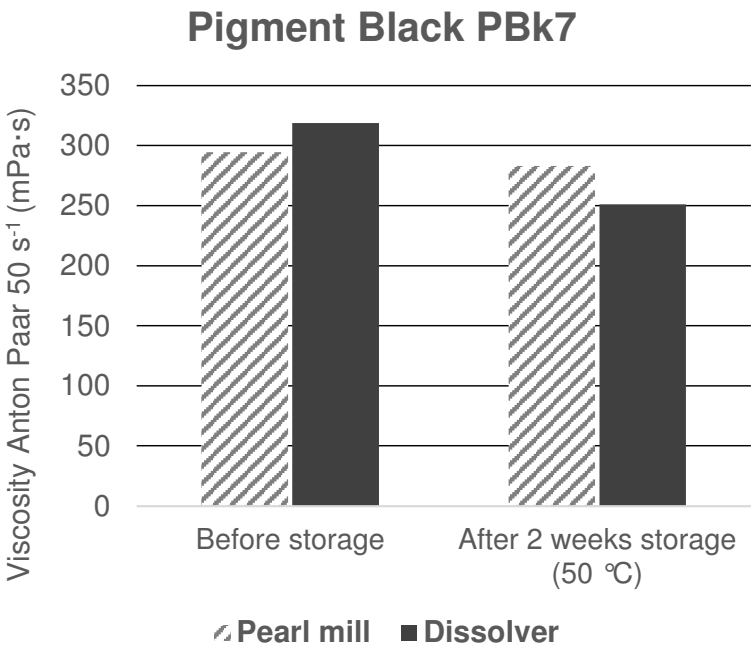


Excellent colour development with pigment concentrate prepared with dissolver:

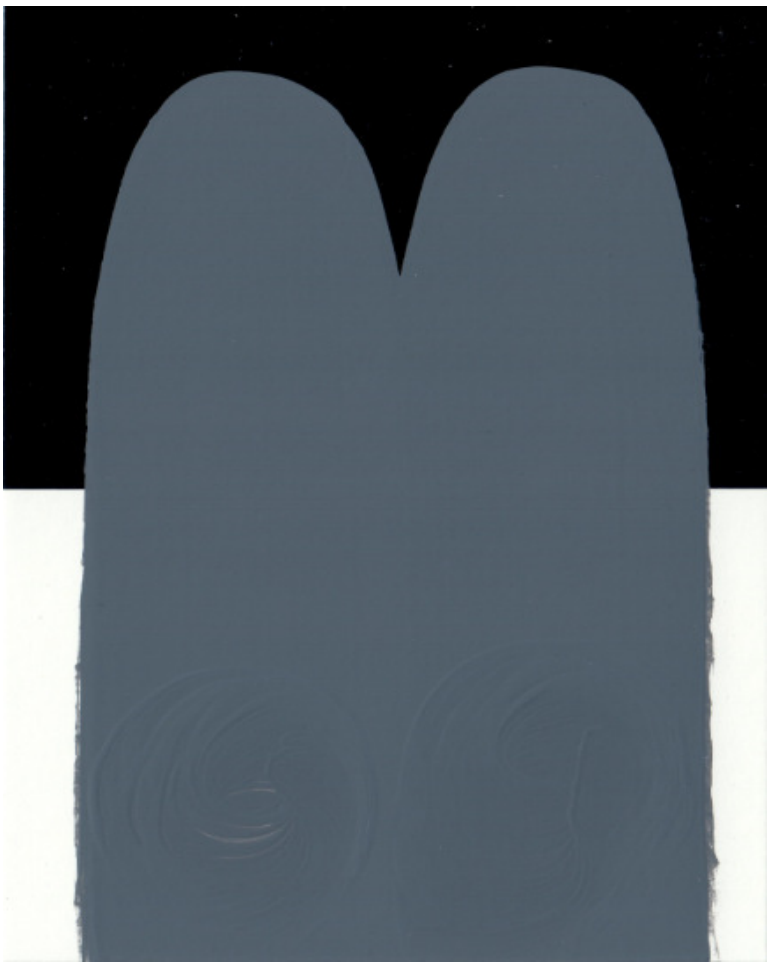
- ✓ No reduction in colour strength
- ✓ Similar pigment particle sizes achieved

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**

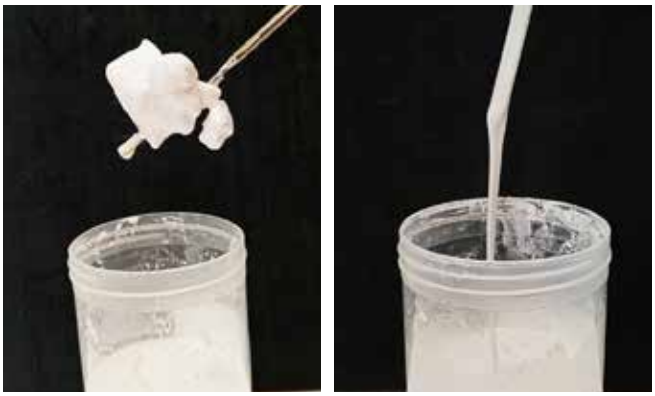
Talc filler concentrate

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	**Tronox CR-826 (TiO_2)**
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**
P28	**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	**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**
PO73	**Irgazin DPP Cosmoray Orange**
PO73	**Irgazin Orange L2990HD**

Color index	Pigment name
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	**Pink 2997C Sudaperm**
PR122	**Sudaperm Pink 2997C**
PR122	**Sudaperm Pink 2998**
PR122	**Sudaperm Pink 2999**
PR122	**Sudaperm Pink 3000**
PR122	**Monolite Red 312202**
PR170	**Sudaperm Red 2963C**
PR170	**Naphtol Red**
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**
PY74	**Hansa Brilliant 2GX 70-S**
PY74	**Sudafast Yellow 117**
PY74	**Lilyfast G74**
PY74	**Acetanil Yellow 2GO 7415C**
PY110	**Sudaperm Yellow 2925C**
PY139	**Sudaperm Yellow 2935**
PY139	**Yellow 2935 Sudaperm**
PY150	**Yellow 4G**
PY154	**Sudaperm Yellow 2906**
PY180	**Benzimidazolone YH9-D**
PY184	**ChromaFer Yellow Y09**
PY 184	**Durovan 5001C**