We will start soon…

To make this call most efficient for everybody, we have **muted** your phones.

For questions, kindly use the **chat function**.

Should you have trouble hearing us, kindly choose **"use computer for audio"**. Should there still be issues, kindly try **reconnecting** to the WebSeminar.

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Your **hosts** for this call

Formulation Additives for Hazard-label Free Aqueous Universal Colorants

Harald Frommelius
Presenter

Andrea Schamp/
Kerstin Schurig
Chat

Harald Frommelius

Technical Sales
Formulation Additives
EMEA region

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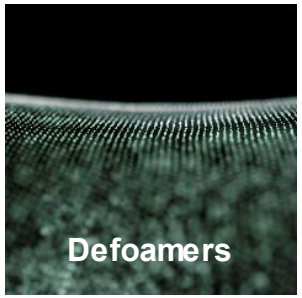
Formulation Additives for Hazard-label Free Aqueous Universal Colorants

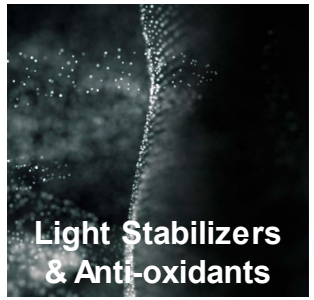
Düsseldorf, September 1st, 2020

Agenda

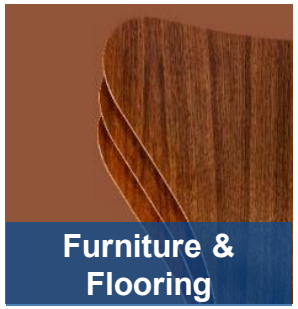
1. Introduction
2. Architectural coatings challenges / trends dispersing agents
3. Additives for universal colorants
4. Dispersing Agents Toolbox
5. Summary

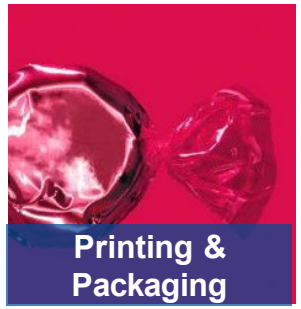
Our comprehensive portfolio enables solutions for various industries

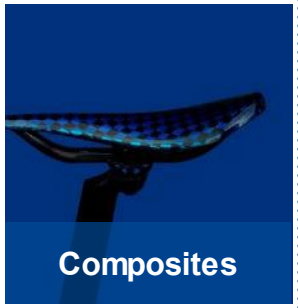




BASF is the premiere provider of **Performance & Formulation Additives** for the paints and coatings industry







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Architectural coatings challenges / trends for dispersing agents

Titanium Dioxide

Indoor Air Quality

Filler stabilizing

Label free

Color acceptance improver

DIY

Easy to apply

No Rub-out

Universal pigment concentrates

Eco-friendly

MIT free

Lean Manufacturing

Eco Labels

Compatibility

Low-odor

Water sensitivity

Organic pigments

Viscosity stable

Low VOC

Total Cost of Formulation

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Architectural coatings - major regulatory changes

- 2003 GHS (Globally Harmonized System) first edition by United Nations
- 2007 EU implementation via REACH (Regulation, Evaluation, Authorization and Restriction of Chemicals)
- 2009 CLP (Regulation for Classification, Labelling and Packaging of substances and mixtures) Supplement to REACH, 6 amendments by now
- Deadline for coating products June 1st, 2015 (new pictograms)
- APEO is listed in Annex XIV (list of regulated substances). „Sunset date“ will be January 2021
- New Ecolabel June 2015: max. VOC in interior wall and ceiling paints 10 g/l (down from 15), SVOC max. 30 (white)/40 (tinted) g/l

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What matters to pigment concentrate producers right now?

- Creation of **universal colorant lines** for water-borne and solvent-borne in plant tinting and point of sales tinting
- Optimum formulation for **full range of colors**
- **Complexity reduction** in production and raw material basket
- **Healthier paints** fulfilling eco-labels

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What's special about the Dispersing Agents Toolbox?

- Our selection of dispersing agents for universal colorants enables **hazard-label-free and eco-label-certified final paints.**

- The Dispersing Agents Toolbox applies to all colors and resins: **It reduces complexity by replacing two systems with one while in parallel keeping the same performance.**

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Dispersing Agents Toolbox

Dispersing agents for label-free universal pigment concentrates

Performance highlights:

- Allows formulation of universal colorants
- Optimum pigment concentrates for complete range of colorants
- Excellent compatibility in water/solvent-based systems

Sustainability highlights:

- Allows formulation of label-free universal colorants
- APEO-free
- Complies with the 2014 revision of the eco-flower label

Application:

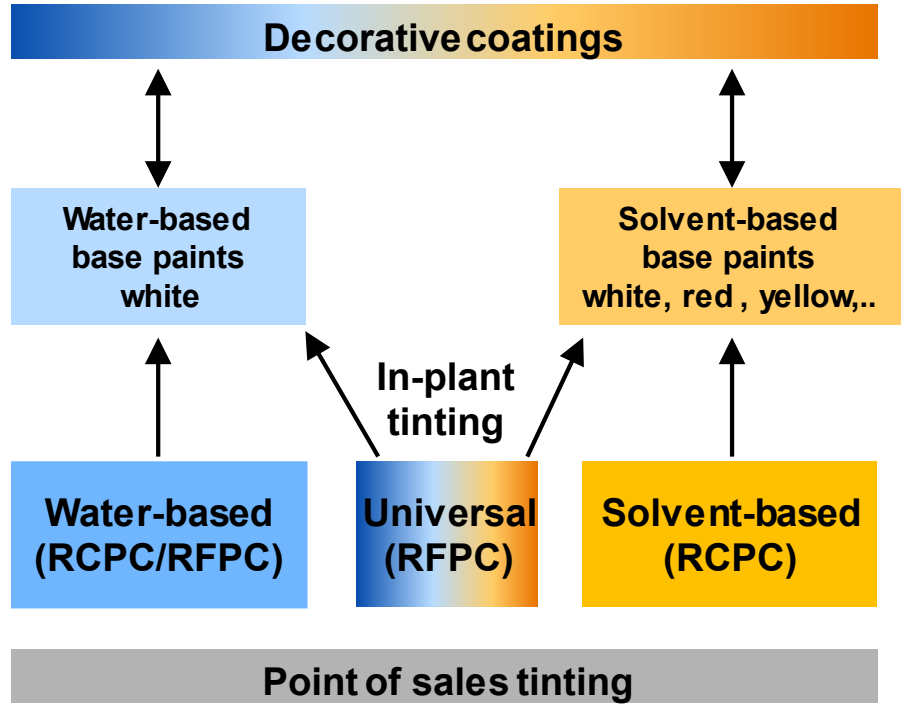
Our dispersing agents toolbox supports you achieving excellent performing and label-free pigment concentrates which comply with eco-labels

Dispex® Ultra PX 4525

Dispex® Ultra FA 4484

Dispex® Ultra PX 4522

Dispex® Ultra FA 4488



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Our Dispersing Agents Toolbox

- 4 dispersing agents create the toolbox:

	Technology	Solid content (%)	Appearance	VOC (%) ISO 17895	VOC (%) ISO 11890-2	Product Label	Eco-label 2014/312/EU
Dispex® Ultra PX 4525	Mixture of amine- and acid-functional polymers	91	Clear yellow to brownish liquid	~ 0.3%	< 1%	H302, H315, H318	yes
Dispex® Ultra FA 4484	Anionic Surfactant	26	Clear to slightly yellowish liquid	< 0.1%	< 0.05%	H315	yes
Dispex® Ultra PX 4522	Nonionic Polymer	100	Hazy colorless viscous liquid	< 0.1%	< 0.01%	Label-free	yes
Dispex® Ultra FA 4488	Nonionic Polymer	100	Clear to slightly yellowish liquid	< 0.1%	< 0.01%	Label-free	yes

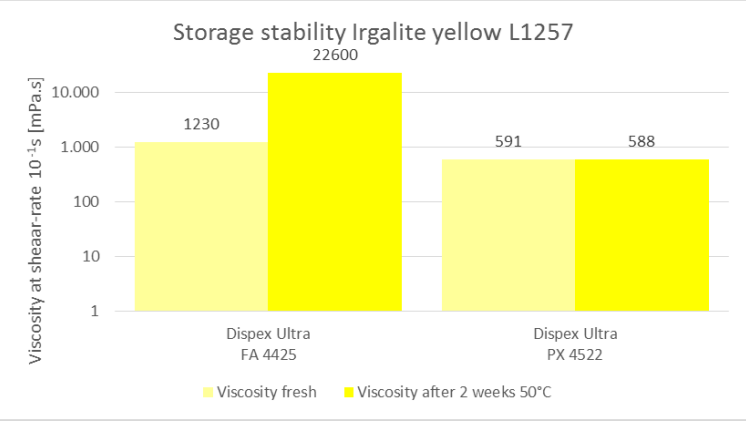
So how does it work?

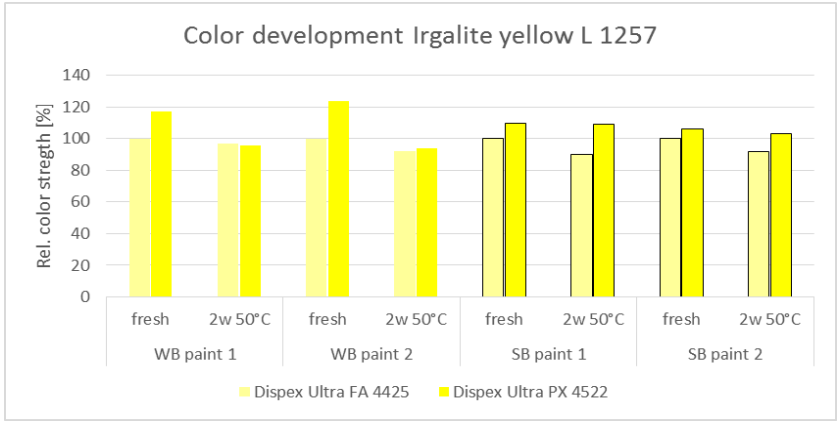
Most commonly used pigments were successfully tested in several systems

Type of paint	Paint
WB paint 1	Facade paint
WB paint 2	Rubbol BL Azura
WB paint 3	Sigma Aqua PU
SB paint 1	Sigma Contour satin
SB paint 2	Rubbol AZ plus

Pigments tested	
Irgalite® Yellow L 1257	Heliogen® Green L 8735
Bayferrox® Yellow 3920	Heliogen® Blue L 7085
Irgazin® Red L 3670	Hostaperm® Pink E
Bayferrox® Red 130 M	Hostaperm® Violet RL special
Irgalite® Red L 3865	Special Black® 100

Results with Irgalite® Yellow L 1257 (PY 74)
Storage stability and color strength





	WB paint 1				WB paint 2			
All Color DATA	**Relative color strength**	**Rubout**	**Relative color strength**	**Rubout**	**Relative color strength**	**Rubout**	**Relative color strength**	**Rubout**
Dispersant	**fresh**	**fresh**	**2w 50°C**	**2w 50°C**	**fresh**	**fresh**	**2w 50°C**	**2w 50°C**
Dispex Ultra FA 4425	100	0,3	97	1	100	2,5	92	3,4
Dispex Ultra PX 4522	117	0,9	96	1,1	124	1,5	94	0,8
	SB paint 1				**SB paint 2**			
	Relative color strength	**Rubout**	**Relative color strength**	**Rubout**	**Relative color strength**	**Rubout**	**Relative color strength**	**Rubout**
Dispersant	**fresh**	**fresh**	**2w 50°C**	**2w 50°C**	**fresh**	**fresh**	**2w 50°C**	**2w 50°C**
Dispex Ultra FA 4425	100	2,1	90	3,4	100	0,6	92	0,7
Dispex Ultra PX 4522	110	0,6	109	0,8	106	0,2	103	1

Results with Irgalite® Yellow L 1257 (PY74)
Compatibility / rub-out

Reference Dispex® Ultra FA 4425	New Dispex® Ultra PX 4522	Reference Dispex® Ultra FA 4425	New Dispex® Ultra PX 4522

Water based 1

Solvent based 2

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Results with Bayferrox® Yellow 3920 (PY 42)
Compatibility / rub-out

Reference Dispex® Ultra FA 4425	New Dispex® Ultra FA 4484/PX 4525	Reference Dispex® Ultra FA 4425	New Dispex® Ultra FA 4484/PX 4525

Water based 1

Solvent based 1

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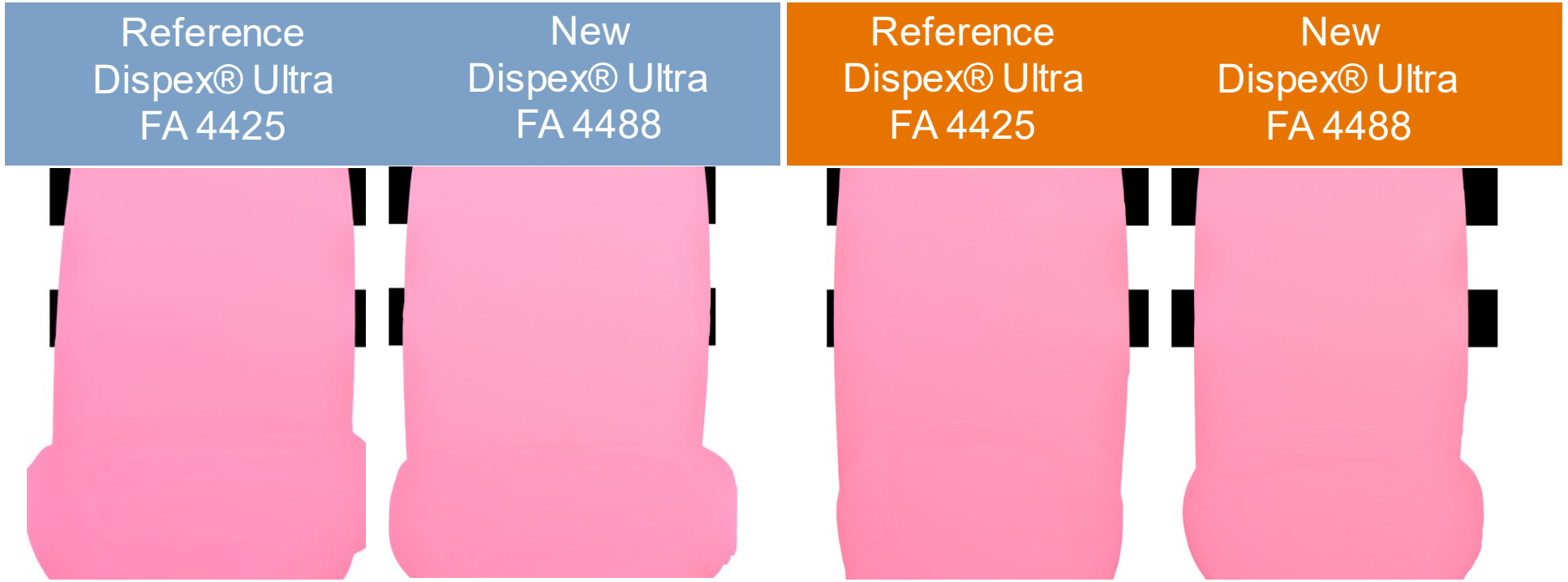
Results with Irgazin® Red L 3670 (PR 254)
Compatibility / rub-out



Water based 1

Solvent based 1

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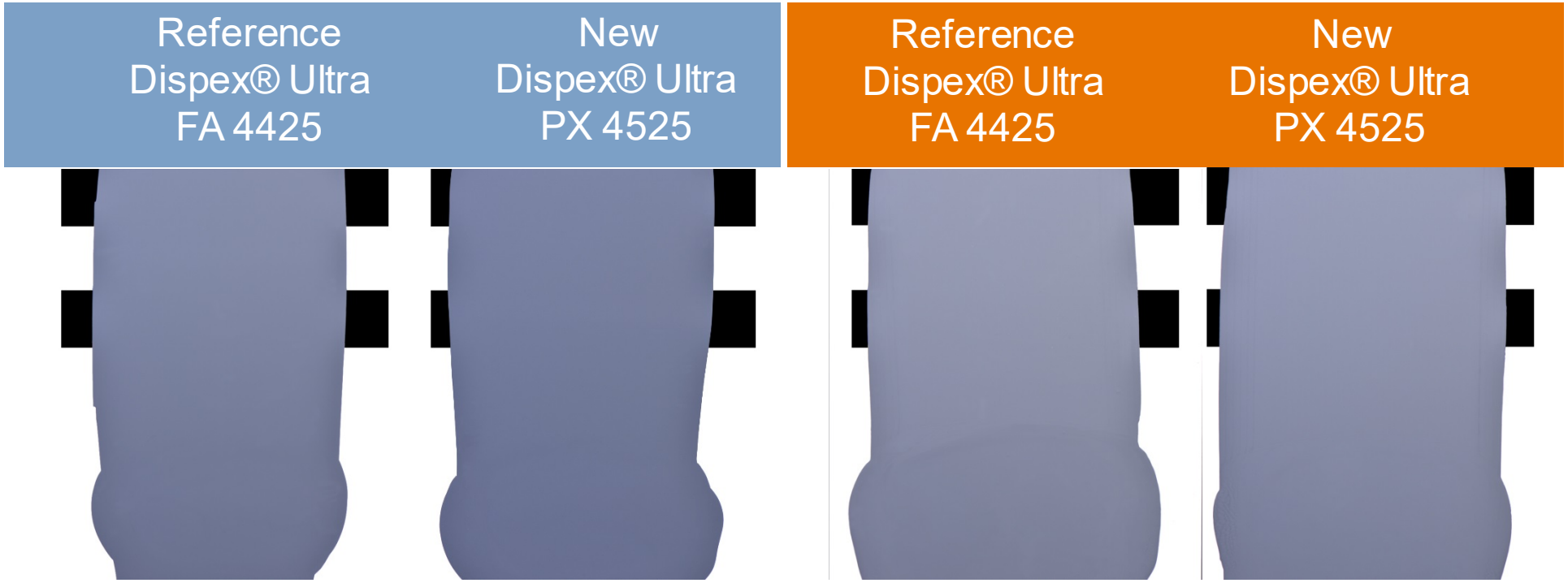
Results with Heliogen® Blue L 7085 (PB 15:3) Compatibility / rub-out

Reference Dispex® Ultra FA 4425	New Dispex® Ultra PX 4525/FA 4488	Reference Dispex® Ultra FA 4425	New Dispex® Ultra PX 4525/FA 4488

Water based 1

Solvent based 1

Results with Special Black® 100 (PBk 7)
Compatibility / rub-out



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Summary: Toolbox benefits

Performance benefits:

- Allows for formulation of universal colorants
- Has a broad pigment application latitude
- Offers the possibility to create optimum pigment concentrates for full range of colorants
- Excellent compatibility in water- and solvent-based systems
- Excellent storage stability

Sustainability benefits:

- Low VOC according to DIN EN ISO 17895 (TÜV) and ISO 11890-2[1]
- APEO-free[2]
- Allows formulation of label–free universal colorants
- Complies with the 2014 revision of the Eco-flower label

[1] VOC content <1%
[2] APEO not intentionally added. Product may comprise minor traces as ubiquitiously occuring impurities cannot be excluded

So would you like to…

… formulate hazard-label-free, universal pigment concentrates?

Dispex® Ultra PX 4525
Dispex® Ultra FA 4484
Dispex® Ultra PX 4522
Dispex® Ultra FA 4488

Test our system with our new technology now!

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Guide formulations & focus products

Guide formulations by pigment

Color Index	TiO_2 Kronos 2310	Irgalite Yellow L 1257	Bayferrox yellow 3920	Sicopal yellow L 1100	Irgazin Red L 3670 HD	Bayferrox Red 130M	Irgalite Red L 3865	Heliogen green L 8735	Heliogen blue L 7085	Hostaperm Rosa E	Hostaperm Violet RL special	Special Black 100
	PW 6	PY 74	PY 42	PY 184	PR 254	PR 101	PR 112	PG 7	PB 15:3	PR 122	PV 23	PBk 7
Dispex Ultra FA 4484	2,5		2,5	7,5		9,9				5,0		
Dispex Ultra FA 4488					8,4	4,3	6,4	6,8	5,3	1,0		
Dispex Ultra PX 4522	4,0	7,50		2,5						4,0		
Dispex Ultra PX 4525		2,70	5,0					2,5	5,7		8,3	6,7
Loxanol PL 5813	12,0	10,00	12,0	10,0	8,0	8,0	10,0	10,0	10,0	8,0	8,0	8,0
Water, demineralized	19,7	38,55	25,0	18,9	52,1	16,6	42,4	49,7	47,7	45,9	44,7	53,7
NaOH 25%	1,1	0,25	0,8	0,6	0,5	0,2	0,2	0,4	0,7	0,4	1,0	1,1
ASP 170 (filler)										25,0	22,5	
Pigment	60,0	40,00	54,0	60,0	30,0	60,0	40,0	30,0	30,0	10,0	15,0	30,0
Foamstar SI 2250	0,3	0,80	0,3	0,2	0,8	0,3	0,8	0,5	0,5	0,3	0,3	0,3
Attagel 50 (anti-settling)	0,3		0,3	0,2		0,5						
Rheology modifier (Thickener)										0,2		
preservative	0,1	0,20	0,1	0,1	0,2	0,2	0,2	0,2	0,2	0,2	0,2	0,2
Total	100,0	100,0	100,0	100,0	100,0	100,0	100,0	100,0	100,0	100,0	100,0	100,0
DoP	8%	25%	10%	7%	28%	11.5%	16%	30%	35%	18%	50%	20%

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Focus products for aqueous colorants

	Dispersing	Defoamer	Rheology
Aqueous	• Dispex Ultra PX 4290 • Dispex Ultra PX 4585 • Dispex Ultra PX 4575 • Dispex Ultra PX 4275 • Dispex Ultra PA 4550	• Foamstar SI 2250 • Foamstar SI 2216 • Foamstar SI 2240	• Attagel 50 • Rheovis AS 1130
Aqueous Universal	• Dispex Ultra FA 4480 • Dispex Ultra FA 4483 • Dispex Ultra FA 4425	• Foamstar SI 2250 • Foamstar SI 2216	• Attagel 50
Aqueous Universal Label free	• Dispex Ultra FA 4522 • Dispex Ultra FA 4484 • Dispex Ultra PX 4525 • Dispex Ultra FA 4488	• Foamstar SI 2250 • Foamstar SI 2216	• Attagel 50

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Lab Assistant for Architectural Coatings

Lab Assistant is a web-based application that makes it easier for you to find BASF dispersions and additives for Architectural Coatings in Europe (*www.lab-assistant.basf.com*)

Features & Benefits

- Get product recommendations and formulation ideas according to the final properties of the paint, technical data, complete recipes and ingredient calculator
- Access formulation expertise to gain new insights and ideas
- All relevant data (e.g. MSDS, TDS, Reach, sustainability aspects, brochures, value cards, etc) available in one location
- Compare products or formulations
- Individualize your own account and share content with your colleagues
- Order samples or get in touch with our experts
- Runs on your PC / laptop / tablet / smartphone

Contacts

Dr. Sascha Oestreich
Head of Technical Sales Formulation Additives
Phone: + 49 211 7940-9028
Mobile: +49 173 5396101
sascha.oestreich@basf.com

Harald Frommelius
Technical Sales Formulation Additives
Phone: +49 211 7940-5244
Mobile: +49 172 203 5921
Harald.frommelius@basf.com

Kerstin Schurig
Marketing Formulation Additives Europe
Phone: +49 621 60-48010
Mobile: +49 174 3498978
kerstin.schurig@basf.com

internet: http://www.basf.com/additives

email: formulation-additives-europe@basf.com

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There is more to come…

Next series of WebSeminars starting September 1st

Dispersing Agent Toolbox: **Sept 1 & 3**

UV- and thermostabilization of polyurethane and SMP-systems: **Sep 9 & 10**

Highly efficient Newtonian PU-thickener for architectural paints: **Sep 16 & 17**

Exceptional protection of joinery coatings: **Sep 23 & 24**

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