

Sustainability

Formulation additives –

Products with renewable content

14. March 2019

Overview – dispersants without renewables

product	Food contact compliance	application
Dispex® Ultra PX 4290	NEW ●	Resin-free pigment concentrates
Dispex® Ultra PX 4585	●	Resin-free pigment concentrate
Hydropalat® WE 3966	●	Resin-based pigment concentrate, improve shock stability
Dispex® Ultra PX 4522	●	Resin-based pigment concentrate

Overview – renewables dispersants

product	Percentage renewables	Food contact compliance
Dispex® Ultra FA 4437	34%	●
Dispex® Ultra FA 4480	20%	●
Dispex® Ultra FA 4483	8%	●
Dispex® Ultra FA 4488	45.5%	●

product	Percentage renewables	Food contact compliance
Hydropalat® WE 3158	12%	●
Hydropalat® WE 3165	5%	●
Hydropalat® WE 3182	30%	●
Hydropalat® WE 3645	24%	●
Hydropalat® WE 3625	>98%	●



FCS Dispex Ultra
FA 4437

Dispex® Ultra FA 4480 and 4483

Universal wetting / dispersing agents for pigment concentrates

Performance highlights:

- Excellent pigment stabilization, viscosity reduction and wetting and dispersing properties
- Improved stability and colour intensity of pigment concentrates
- Excellent compatibility with aqueous and solvent-based systems
- Anti-settling effect

Sustainability highlights:

- VOC-free acc. to EU 2004/421 and US-EPA Method 24
- APEO-free
- Solvent-free
- Low odour

Application:

Dispex® Ultra FA 4480 / FA 4483 offer solutions for water-based and universal pigment concentrates. Dispex® Ultra FA 4480 is well suited for organic pigments and carbon black whereas Dispex® Ultra FA 4483 provides excellent dispersions with inorganic pigments. Together Dispex® Ultra FA 4480 / FA 4483 are used to formulate APEO-free and glycol-free universal colorants..

Characteristic Values:

Property	Dispex® Ultra FA 4480	Dispex® Ultra FA 4483
Appearance	clear liquid	clear viscous liquid
pH	~ 6.5	~ 2
Active content	80%	30%



Other options are:

- Hydropalat® WE 3158
- Hydropalat® WE 3165

Dispersants toolbox incl Dispex® Ultra FA 4488

Dispersing agents for label-free universal pigment concentrates

Performance highlights:

- Allow for formulation of universal colorants
- Broad pigment application latitude
- Enable optimum pigment concentrates for full range of colorants
- Excellent compatibility in water and solvent-based systems
- Excellent storage stability

Sustainability highlights:

- Low VOC according to DIN EN ISO 17895 and ISO 11890-21
- APEO- free
- Allow formulation of label-free* universal colorants
- Comply with the 2014 revision of the Ecolabel
- Broad food contact compliance

Application:

Our toolbox supports you to achieve excellent performing and label-free* pigment concentrates. It comprises of 4 dispersing agents which:

- Allow for formulation of label-free*, universal pigment concentrates
- Comply with the requirements of the 2014 revision of the Ecolabel regulation
- Are suitable for universal use, therefore they allow for a single colorant line for water- and solvent-borne systems in-plant tinting and point-of-sale tinting
- Allow for optimum formulation of universal pigment concentrates for full range of colors

Characteristic Values

	Technology	Solid content (%)	Appearance	VOC (%) ISO 17895	VOC (%) ISO 11890-2	Product Label	Eco-label 2014/312/EU
Dispex® Ultra FA 4484	Anionic Surfactant	26	Clear to slightly yellowish liquid	< 0.1%	< 0.05%	H315	yes
Dispex® Ultra FA 4488	Nonionic Polymer	100	Clear to slightly yellowish liquid	< 0.1%	< 0.01%	Label-free	yes
Dispex® Ultra PX 4522	Nonionic Polymer	100	Hazy colorless viscous liquid	< 0.1%	< 0.01%	Label-free	yes
Dispex® Ultra PX 4525	Mixture of amine- and acid-functional polymers	91	Clear yellow to brownish liquid	~ 0.3%	< 1%	H302, H315 H319	yes

* No GHS pictogram on the pigment concentrate



Dispex® Ultra FA 4437

Dispersing agents for resin-free and resin-based pigment concentrates

Performance highlights:

- Has strong affinity to pigment surfaces
- Color acceptance improvement for aqueous systems
- Good wetting properties on difficult-to-wet substrates

Sustainability highlights:

- Low VOC according to DIN EN ISO 17895 and ISO 11890-21
- APEO- free
- Label-free
- Very broad food contact compliance

Application:

Dispex® Ultra FA 4437 offer solutions for water-based resin-free and resin-based pigment concentrates. Dispex® Ultra FA 4437 is well suited for organic pigments, also with difficult to wet pigments like PR 57:1. But apart from that, the product also might also prevent defects like cratering , fisheyes, pinholes – depending on the formulation. In addition it shows often a good wetting of difficult-to-wet substrates.

Characteristic Values:

Property	Dispex® Ultra FA 4437
Density at 70°C	~ 1,025 mPa·s
Hydroxy value	~ 78.5 mg KOH/g
Saponification value	~ 60
pH (5%)	~ 7.5

Other option:

- [Hydropalat® WE 3182](#)



Hydropalat® WE 3645

Dispersing agents for solvent- and resin-free pigment concentrates

Performance highlights:

- Co-dispersant for solvent and resin-free PC
- Color acceptance improvement for aqueous systems
- Suitable for organic as well as for inorganic pigments

Sustainability highlights:

- VOC free
- APEO- free
- Readily biodegradable

Application:

Hydropalat® WE 3645 shows excellent performance as dispersing and wetting agent in aqueous, resin- and solvent-free pigment pastes. It is well suited for organic but also for inorganic pigments. Excellent combination partners are Dispex® Ultra FA 4480 or FA 4483. Hydropalat® WE 3645 also improves color acceptance of pigment pastes.

Characteristic Values:

Property	Hydropalat® WE 3645
Color APHA	~ 75
pH	~ 5
solids	~ 45%

Other option:

- Hydropalat® WE 3625
with higher renewables (> 98%)



Overview – renewables wetting agents

product	Percentage renewables	Food contact compliance
Hydropalat® WE 3120	30%	●
Hydropalat® WE 3130	52%	●
Hydropalat® WE 3486	19%	●

Hydropalat® WE 3120

Non-ionic surfactant for wb coatings

Performance highlights:

- Fatty alcohol alcoxylate
- Excellent substrate wetting
- Strong reduction of surface tension
- Low foaming
- Water soluble

Sustainability highlights:

- Food Contact Compliances: Swiss Ordinance SR 817.023.21, FDA Regulations 21 CFR 175.105

Application:

Hydropalat® WE 3120 is a low-foaming wetting agent and is recommended to be used in the formulation of aqueous paints and printing inks. Hydropalat® WE 3120 can act as a good antifoam agent in numerous applications.

Characteristic Values:

Appearance	Colorless liquid
Density	~ 0.956 g/cm ³
pH value (1%)	~ 7
Cloud point	~ 29.5 °C



Other options are:

- Hydropalat® WE 3130

Hydrolat® WE 3486

Anionic surfactant for wb inks and OPVs

Performance highlights:

- Modified Dioctylsulfosuccinate
- Excellent substrate wetting
- Strong reduction of surface tension
- Acts as well as coalescing agent and thickener

Sustainability highlights:

- Food Contact Compliance
- VOC-free

Application:

Hydrolat® WE 3486 is a wetting agents based on modified Dioctylsulfosuccinates (DOSS), which is excellent for surface tension reduction and dynamic substrate wetting in coating and printing processes.

Due to its outstanding wetting properties, the product is particularly suitable for difficult to-wet substrates such as plastics and metal surfaces, cellulose film, aluminium and plastic foils, silicone and treated papers or glass.

In addition, Hydrolat® WE 3486 can function as coalescing agents as well as thickener and is therefore a very cost effective additive for OPV producers. Hydrolat® WE 3486 can also be used in decorative and industrial coatings as compatibilizer e.g. when universal pigment concentrates are used in order to improve color acceptance.

Characteristic Values:

Flash point	>100°C
Solid content	~ 86%
Density at 20°C	~ 1.15 g/cm ³



Overview – renewables defoamer and others

product	Percentage renewables	Food contact compliance
Foamaster® NO 2306	28%	●
Foamaster® NO 2335	91%	●
Foamaster® NO 2331	>90%	●
FoamStar® ED 2522	20%	●
FoamStar SI 2210	30%	●

product	Percentage renewables	Food contact compliance
Loxanol® CA 5330	50%	●
Loxanol® CA 5336	68%	●
Loxanol® MI 6430	60%	●
Loxanol® MI 6460	77%	●
Efka® RM 1900	~ 70%	●
Efka® PL 5381	~ 75%	●
Efka® PL 5382	~ 75%	●

Foamaster® NO 2335

Environmentally sound, natural oil-based alternative to mineral oil defoamers

Performance highlights:

- Quick foam suppression
- Highly compatible
- No haze, no fogging
- Excellent long-term stability

Sustainability highlights:

- VOC-free acc. to EU 2004/42 & US-EPA Method 24
- Ultra low S-VOC content
- Based on renewable oils
- Low odour
- Designed to be used in paints with proenvironmental labeling (GS-11, Blue Angel, Ecolabel, German TOV)

Application:

Foamaster® NO 2335 is a natural-oil based, VOC-free and ultra low SVOC defoamer which provides excellent performance and avoids haze and fogging often seen with mineral oil defoamers. It is suitable for all types of aqueous premium paints and clear coats: high PVC, premium flat & eggshell, semi-gloss

Characteristic Values:

Appearance	Yellowish hazy liquid
Flash point	> 100°C
Density at 20°C	~ 0.90 g/cm ³
Viscosity	~ 1000 mPa s
VOC	< 0.1 acc. to EU 2004/42 (b.p. > 250°C)
SVOC	~ 2000 ppm acc. To TÜV test

Other options :

- **Foamaster® NO 2331**
(broadest food contact compliance)

FoamStar® ED 2522

High performance, ultra low S-VOC silicon polymer emulsion defoamer

Performance highlights:

- Excellent foam suppression in premium flat paints, mid to low PVC paints and clear coats
- One of the fastest for bubble break times
- Designed for zero to < 100 g/l paints
- Highly compatible, no haze, no fogging
- Excellent persistency and gloss
- Easy to incorporate in grind or let down

Sustainability highlights:

- VOC-free ace. to EU 2004/42 & US-EPA Method 24
- Water-based emulsion
- Does not contain mineral oils
- Free of odours
- Designed to be used in paints with pro-environmental labelling (GS-11, Blue Angel, Ecolabel, German TUV)

Application:

Foamstar® ED 2522 is an emulsion defoamer based on hyper-branched polymers and organo-modified silicones which shows an optimum balance between compatibility and defoaming efficiency/persistency. It is one of our best defoamers and is suitable for all types of aqueous premium paints and clear coats.

Characteristic Values:

Appearance	White liquid
Solids (%)	20 %
Density at 20°C	1.00 g/cm ³
Viscosity	1500 mPa s
Flash Point	> 100°C



FoamStar® SI 2210

Very effective defoamer based on modified Polysiloxanes with good compatibility

Performance highlights:

- Excellent compatibility for high gloss applications
- Easy handling due to low viscosity
- Excellent long term efficiency

Sustainability highlights:

- Low VOC ace. to EU Ecolabel 2014/312/EU (<0.2%)
- Low odor

Application:

FoamStar® SI 2210 is a very effective silicone based defoamer for glossy paints based on pure acrylic binders or alkyd emulsions. Excellent results can be achieved in spray coating applications as well as in higher shear processes and as grind defoamer for applications, where a good compatibility is required. Additionally the product is also well suited for clear coats

Characteristic Values:

Appearance	Colorless to slightly hazy liquid
Density at 20°C	0.95 g/cm ³
Viscosity	75 mPa s
Solids	~ 100%





We create chemistry