

Without impairing coating properties:

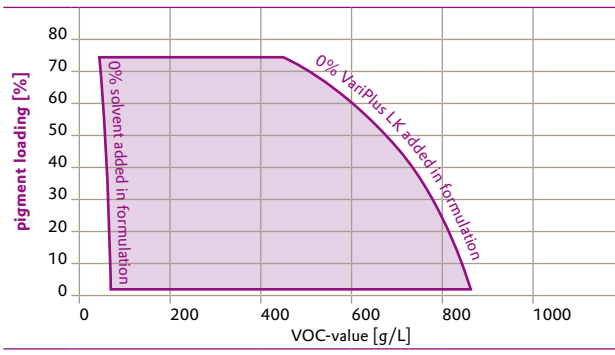


The new grinding resin is compatible with all common binders, with only minimal effect on coating properties.

Tested binder systems

- ✓ short-oil alkyd resin
- ✓ medium-oil alkyd resin
- ✓ long-oil alkyd resin
- ✓ self-crosslinking acrylate
- ✓ 2-pack PU acrylate
- ✓ 1-pack polyester
- ✓ 2-pack polyester
- ✓ polyether
- ✓ poly-aspartic acid ester
- ✓ epoxy resin
- ✓ nitrocellulose
- ✓ urea-formaldehyde resin

TEGO® VariPlus LK (93% solid)



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TEGO® VariPlus LK: Lower VOC Content in Pigment Concentrates

Emission limits for volatile organic compounds (VOC) are being lowered worldwide. As a result, coatings formulators are increasingly limited in their choice of raw materials and hence their formulations.

TEGO® VariPlus LK, the new grinding resin, drastically lowers the VOC content in pigment concentrates for solventborne coatings and for the overall formulation.

Until now, solventborne pigment concentrates have generally had a high VOC content, which affects the final VOC content of colored coatings. To reduce the high VOC content, Evonik has developed the grinding resin TEGO® VariPlus LK. This new resin reduces the viscosity of the concentrate, thus permitting optimized pigment loading. When used in combination with the dispersing additive TEGO® Dispers 676, the VOC content in the concentrate can be lowered by up to 75%. For the overall formulation, this means a VOC reduction of up to 100g/L when adding 20% concentrate.

For the formulator, this means more formulation freedom, increased flexibility in the choice of raw materials, and greater color diversity.

TEGO® VariPlus LK is one of the first liquid grinding resins on the market. Until now, grinding resins have been supplied as granules which must be dissolved in a solvent. With TEGO® VariPlus LK, formulators will be able to eliminate this production step.

Advantages of TEGO® VariPlus LK

- more formulation freedom
- increased flexibility in the choice of raw materials
- greater color diversity
- elimination of production step "dissolving"
- ultimate viscosity reduction with TEGO® Dispers 676

Area of application

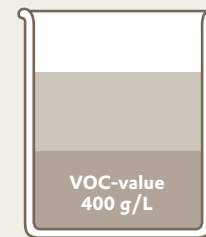
	0	1	2	3	4	5
Hardness						
Gloss						
Viscosity reduction/increase of solids content						
Drying speed						
Pigment wetting and stabilization						

0 = unsuitable ... 5 = highly suitable

TEGO® VariPlus LK can reduce VOC level in tinted formulations

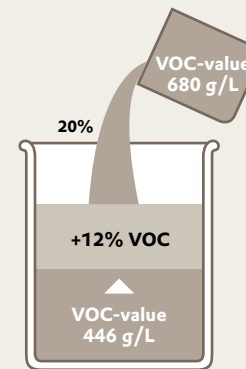
Base:

Ready to use lacquer adjusted to VOC-value of 400 g/L.



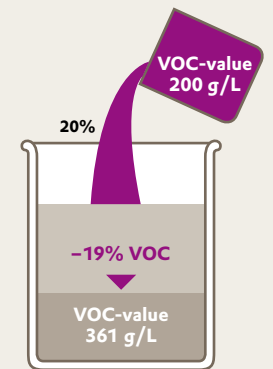
Tinting with market standard:

After adding 20% standard pigment concentrate the VOC-value increased to 446 g/L.



Sample 2 - new technology:

After adding 20% low VOC pigment concentrate the VOC-value was reduced to 361 g/L.



Europe with Limitation to 420 g/L VOC in Refinishing Car coatings

China with new Regulation - ready to spray 420 g/L VOC

What is coming next?

2006

2008

2010

2012

2014

2016

2018

2020

