Pioneering solutions

Additives from BYK offer a diverse range of cross-sector possibilities for industrial applications. You will have seen the results of our specialty chemicals both in premium technology products such as tablet displays, wind power plants or high-tech cars as well as in everyday items such as parquet flooring, washing machines or wall paints – they are everywhere.
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## TIPS
**Information for Your Stay**
- Highlights in Nuremberg
To overcome the difference in surface tension between pigments and water, dispersing additives for water-borne systems need a certain hydrophilicity which can be achieved for example through ionic or hydrophilic structures. As these components remain in the cured coating, they bear the risk of increasing the coating’s hydrophilicity and, thus, negatively influencing characteristics such as water, stain, and corrosion resistance.

The water and corrosion resistance is of special importance to antirrosive primers and DTM (direct to metal) coatings whereas wood coatings need excellent water and stain resistance. These systems are mainly pigmented with titanium dioxides and other inorganic pigments, fillers and anticorrosive pigments.

DISPERBYK-2080 and DISPERBYK-2081 are new tailor-made wetting and dispersing additives based on novel chemical structures, which combine good viscosity reduction and deflocculation of inorganic pigments on one hand with the least negative influence on water, stain, and corrosion resistance on the other hand as possible.
Wetting & Dispersing Additives

DISPERBYK-2158
DISPERBYK-2159

Wetting and Dispersing Additives for Excellent Dispersion and Stabilization of Silica-based Matting Agents to Produce Deep-matt UV-curing and Conventional Solvent-borne Coatings
DISPERBYK-2158 and DISPERBYK-2159

For some time, there has been a trend towards deep-matt solvent-free UV-curing coatings in the wood and furniture coatings industry, and these represent a particular challenge – from careful raw material selection to perfectly tailored application and curing equipment. In addition to specialist matting binders or matting agents, it is common to use treated or untreated silica-based matting agents when gloss needs to be reduced. However, due to the absence of volatile solvents, minimum film shrinkage and the fast curing speed of solvent-free UV-curing coatings, high quantities of silica are required, which causes a significant increase in viscosity – an undesirable effect.

To both satisfy the technical requirements and achieve an optimum application viscosity, BYK has developed the new additives DISPERBYK-2158 and DISPERBYK-2159. Their special structural design enables perfect interaction both with treated and untreated silica-based matting agents to achieve consistently deep-matt coatings with optimum viscosity profiles.

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**Your Benefits**

- Excellent dispersion and stabilization of treated or untreated silica-based matting agents
- Excellent viscosity reduction with minimal thixotropic flow properties (Newtonian flow behavior)
- Possible to add large quantities of matting agents → perfectly suited to producing deep-matt coatings with a good processing viscosity
- Significantly improved matting of solvent-free and solvent-borne UV-curing coatings and conventional solvent-borne systems
- Extremely good compatibility with all common oligomers and monomers
After DISPERBYK-2060 and DISPERBYK-2061 have been successfully introduced into the market, BYK complement its offer for universal colorants by launching DISPERBYK-2062 with regard to improve the compatibility of inorganic pigment concentrates in solvent-borne systems. The additive is VOC- and alkylphenol-free and complies with all regulations and quality labels in the architectural paints sector.

Your Benefits

- Broad compatibility of pigment concentrates in aqueous and solvent-borne coatings
- Especially recommended for inorganic pigments
- Suitable for organic pigments and carbon blacks
- High color strength and excellent color acceptance
- No influence on paint viscosity
- No influence on paint drying

Wetting & Dispersing Additives

DISPERBYK-2062

Wetting and Dispersing Additive for Water-borne Universal Colorants

DISPERBYK-2062

- Pigment-affinic groups
  - Strong affinity to non-polar surfaces
- Pigment-affinic groups (polar)
  - Strong affinity to polar surfaces
- Counter ion
- Hydrophobic chain part
  - Provides excellent compatibility in s/b systems
- Hydrophilic chain part
  - Provides excellent steric hindrance
  - Gives excellent compatibility in w/b systems
Wetting & Dispersing Additives

**DISPERBYK-2205**

Solid Wetting and Dispersing Additive for Organic and Inorganic Pigments in a Multitude of Solvent-borne Applications and UV Printing Inks

DISPERBYK-2205 has an optimum molecular weight to be highly compatible with a multitude of different systems and to result in excellent pigment stabilization and low viscosities. In addition, its reduced amine value and therefore virtually neutral character enable it to be used in acid-catalyzed systems. Coatings that are manufactured with DISPERBYK-2205 are characterized by high gloss and low haze. In printing ink applications it can also be used for medium-polarity systems and even UV systems.

**Your Benefits**

- Stabilizes a multitude of organic and inorganic pigments
- Suitable for all low to medium-polarity systems
- In pigment concentrates:
  - low millbase viscosity
  - high pigment load possible
  - generates Newtonian flow behavior
  - improves color strength
- In co-grinds:
  - reduces flooding/floating
  - significantly increases the in-can storage stability
Surface Additives

BYK-SILCLEAN 3701

Silicone-containing Surface Additive for Epoxy Systems for Long-term Improved Cleanability (Easy-to-Clean Effect)

Your Benefits

• Provides easy-to-clean properties in top coats
• Long-term effect over multiple cleaning intervals
• No negative influence on the adhesion to the substrate or primer
• Improved water repellency
• Reduced carbamate formation in aminic hardener systems
• No foam stabilization
• Improved leveling and surface slip
• Better de-icing properties

Test system: conventional epoxy resin coating
Dosage: 1 % additive on total formulation
Contamination with carbon black
Surface Additives

**BYK-326**

High-solid, Moderately Active Surface Additive for Improving the Leveling of Solvent-borne, Solvent-free and Aqueous Systems

The new BYK-326 displays precisely this balanced profile and ideally completes the BYK range with regard to universal application in all systems. It has medium polarity and displays moderate activity in reducing surface tension, which produces excellent leveling results.

**Your Benefits**

- Exceptional leveling properties in
  - aqueous
  - solvent-borne
  - solvent-free
- Good compatibility with clear coatings; no haze or turbidity, neither in the liquid or dry coating
- Reduces risk of haze and foam stabilization
- High solids – no hazardous substance labeling required
- Cold stable down to -18 °C
Surface Additives

BYK-3565

Acrylate Surface Additive to Increase Surface Energy, and with Anti-cratering Properties

Your Benefits

- Increases the surface energy of the cured coating layer
- Improves wetting and adhesion of the subsequent coating
- Guarantees excellent leveling
- Anti-cratering effect (primarily in aqueous systems)

The requirements on modern coating systems are constantly increasing. In many systems, properties such as leveling, substrate wetting and anti-cratering properties can still be achieved with traditional silicone or acrylate surface additives. However, if good recoatability or adhesion is required at the same time, these products reach their limits.

The new BYK-3565 is the logical further development of BYK’s macromer-modified acrylate additives and can meet these complex requirements. Its special modification enables BYK-3565 to orientate itself to the surface of the coating. Recoatability and the adhesion of subsequent coatings are improved at the same time. BYK-3565 is recommended for use in aqueous, solvent-borne and 100% systems.
Surface Additives

**BYK-3760**

Highly Effective Silicone Additive for Aqueous, Solvent-borne, and UV-curing Systems

BYK-3760 is a unique, highly active polyether-modified polysiloxane which reduces the surface tension significantly. As a result of its low tendency to stabilize foam, BYK-3760 can also be used in applications that involve high shear forces. The additive remains fully effective, even at a very low dosage. At the same time, its outstanding compatibility means that it can be used in a wide variety of resin systems. BYK-3760 runs through an additional production step in which virtually all cyclic siloxanes are removed (D4–D6). As a result, BYK-3760 corresponds to the latest requirements of common ecolabels such as EU Ecolabel, Nordic Swan, Blauer Engel, as well as the specifications for use in food contact applications. BYK-3760 has 100% active substance and is recommended for general industrial, wood and furniture, can, architectural, and protective coatings as well as printing inks.

**Your Benefits**

- Extremely strong reduction in surface tension
  - excellent anti-cratering properties
  - improved substrate wetting
  - high surface slip – low COF values
  - good scratch resistance

- Extremely low foam stabilization
  - significantly better than standard additives

- Extremely low foam stabilization
  - universal

- 100% solid content
  - complies with the strict ecolabel requirements; labeling-free

**BYK-3760 – Very Low Foam Stabilization**

Notes: BYK-3760 has an emulsifying effect in water (highly compatible). It is also highly effective in aqueous systems with a low proportion of co-solvents. Test system and method: 30 ml water and 0.5 ml BYK-3760 is mixed in a cylinder and shaken manually. The foam formation or stabilization is evaluated.
Beside the well-known OPTIFLO-T 1000 and OPTIFLO-L 1400 there is a new addition to BYK’s product portfolio, OPTIFLO-T 1010. Modern coating systems and their resins require specific, tailor-made additives that provide the optimum performance but at the same time an environmentally sound solution. OPTIFLO-T 1010 provides enhanced syneresis, spatter resistance and shows a significant improvement in brushability. At the same time. The additive is VOC-free, APEO-free and Tin-free.

**Rheology Additives**

**OPTIFLO-T 1010**

Liquid VOC-free Rheology Control Additive to Adjust High Shear Viscosity in Water-borne Coatings

**Your Benefits**

- Newtonian flow behavior
- High shear rate viscosity with negligible influence on low- and mid-shear viscosity
- Improvement of roller spatter resistance
- Exzellente Synäresebeständigkeit
- Provides excellent brushability with improved leveling
- No negative influence on gloss
- Excellent color acceptance and rub-out stability
Rheology Additives

**OPTIFLO-H 7625 VF**

VOC-, APEO- and Tin-free Associative Thickeners (HEUR) for Aqueous Systems to Generate Highly Pseudoplastic Flow Behavior

**Substantial Increase in Viscosity in the Low Shear Range**

![Viscosity Graph](image)

- **Test system:** Pure acrylate
- **Dosage:** 0.15 % active substance on total formulation
- **Measurement:** Plate/Cone Viscosimeter

**Your Benefits**

**Product Performance**
- Substantial increase in viscosity in the low shear range
- Offers highly pseudoplastic flow behavior
- Improves anti-sagging and anti-settling properties
- Easy to incorporate

**Environmental Properties**
- SVOC-free (<1.5 g/L)
- VOC-free (< 1500 ppm)
- APEO-free
- Tin-free
- Propylene glycol-free
As a reaction to the revision of different European ecolabels and to the reclassification of certain chemicals as well as tighter limit values for using chemicals that are classified as hazardous substances, BYK is developing additives that comply with the recent standards and can be used without any restrictions. This meets the users’ requirements for easy adaption of their current formulations to the latest safety and environmental directives. The latest results of this pro-active initiative for sustainable development are two new wax additives:

AQUACER 1013 - A VOC-free HDPE-based wax emulsion for improving the surface protection in aqueous coatings and printing inks as well as in aqueous care products and polishes

AQUACER 1039 - A paraffin wax emulsion for improved surface characteristics in aqueous coatings and printing inks.

Your Benefits

- High performance
- Eco-compliant, no use restrictions
- Easy incorporation
- Economic with excellent price-performance ratio
- Drop-in alternatives to well-established types
Wax Additives

CERATIX 8561
CERATIX 8563
CERATIX 8566

NMP-free Wax Additives for Excellent Effect Pigment Orientation in Solvent-borne Coatings
CERATIX 8561, CERATIX 8563 and CERATIX 8566

CERATIX wax additives offer the desired, consistent metallic effect and simultaneously reduce the tendency of pigments to settle, achieving increased storage stability.

The proven CERATIX additives 8461, 8463 and 8466 contain a small quantity (< 0.5 %) of N-methylpyrrolidone (NMP). However, there are increasing demands to manufacture formulations that are entirely free from NMP. To meet these market requirements, BYK has optimized the manufacture of these CERATIX wax additives so that it can produce NMP-free products. The new NMP-free CERATIX additives are an alternative to the established products and offer an equivalent substitute.

Your Benefits

- Excellent effect pigment orientation in solvent-borne base coats
- Prevents phase separation and the pigments settling in the coating
- NMP (N-methyl-2-pyrrolidone)- free
CERAFLOUR 955 is a pure PTFE (Polytetrafluorethylene)-type which is highly effective even at low dosage providing intense texture effects along with deep mat finishes.

CERAFLOUR 958 and CERAFLOUR 959 are both PTFE-modified PE (polyethylene) waxes that allow for a wide range of texture and matting levels from semi- to deep-mat finishes. All three products have an optimal price-performance ratio and, hence add great economic benefit to powder coating formulations.
Defoamers

BYK-1781

Silicone Defoamer for Aqueous Systems to Eliminate Micro-foam Caused by Application Method

A well balanced-defoamer, the interaction of compatibility and efficiency is the guarantor for an easy application and a high quality of the final coating. The new BYK-1781 occupies all these features. The balanced silicone/polyether ratio leads to an excellent compatibility in a variety of aqueous coating systems e.g. pure acrylics, UV-systems and 2-pack PU-systems without a negative impact on clarity, haze and cratering. In addition the high efficiency of BYK-1781 makes it extremely suitable for difficult application methods like HVLP, Airless and Airmix to eliminate the occurring micro-foam in the coating film. The additive can be used in clear coats as well as pigmented systems and is solvent-free.

Your Benefits

- Excellent defoaming in several systems, e.g.
  - Pure acrylics
  - Aqueous UV-Systems
  - Water-borne 2-pack PU-systems
- High transparency and clarity in clear coats
- No or low influence on haze and cratering
- Excellent for various applications in particular
  - HVLP
  - Airless
  - Airmix
Defoamers

**BYK-1788**

VOC-free and Silicone-free Polymer Defoamer for Solvent-borne, High-solid and Solvent-free Systems. Particularly Suitable for 100 % UV Systems

### Your Benefits

- Outstanding defoaming in
  - high-solid
  - solvent-borne
  - solvent-free systems
- Especially suitable for 100 % UV systems
- Broad compatibility
- No negative impact on gloss or transparency
- Especially recommended for non-pigmented systems
- Effective – even at a low dosage
- VOC-free, solvent-free, silicone-free

The well-balanced interaction of effectiveness and compatibility makes the new additive BYK-1788 particularly suitable for non-pigmented systems. BYK-1788 is silicone- and VOC-free and does not introduce any solvents to the formulation. However, in solvent-borne coating systems and those with high solids, BYK-1788 demonstrates its full spectrum of performance.
Defoamers

**BYK-1799**

VOC-free Silicone-containing Defoamer for Solvent-borne, High-solid and Solvent-free Systems. Particularly Suitable for 100 % UV Systems

The main fields of application are UV wood and furniture coatings, and UV printing inks. However, it also perfectly defoams solvent-borne and high solid systems.

**Your Benefits**

- Excellent, spontaneous defoaming, even under critical application conditions such as roller application
- Ideal for 100 % UV systems, solvent-borne, high-solid and solvent-free systems based on epoxy and polyurethane resins
- Prevents macro- and microfoam
- Particularly suitable for highly matted and pigmented systems and also for clear coats
- Effective – even at a very low dosage
- VOC-free, solvent-free
BYK Instruments
The Objective Eye
for Paint QC Solutions

The world is in a continuous change. The trends of ‘globalization and standardization’ within a more and more ‘digital world’ not only change our consumer behaviour, but also your requirements of testing solutions:

Global Communication
• Global specifications are prerequisite for seamless communication and ask for digital standard distribution.
• Excellent technical performance in compliance with international standards is a must requirement.

Standardized QC Management System
• Standardized QC procedures and QC reports need to be easy to set-up globally.
• Routine QC checks and documentation are the key to product and process optimization.

Increase Efficiency
• Innovative technologies are needed to guarantee objective and reliable measurement data.

Figures and facts instead of feelings!
BYK-mac i

The NEW Standard for Multi-angle Color and Effect Measurement

Your Benefits

- Excellent correlation to visual perception: 6-angle color measurement and Sparkle/Graininess analysis
- Quantification of fluorescence with new parameter IntEmission
- Innovative LED technology guarantees excellent inter-instrument agreement allowing digital standard distribution
- 10 year warranty on LED light sources
- Color display for ease of use at production line
smart-chart Software
The Solution to Set-up a Global QC Management System

Your Benefits

- Works with BYK-mac, wave-scan and cloud-runner
- Powerful standard management with digital standard distribution
- Predefined customer specific color and appearance scales of all auto OEMs
- Re-calculation of measurement results in any color systems
- Standardized QC reports – trend graphs – SPC Box Plots
Color & Gloss Control
of Solid Colors

Gloss
micro-gloss

Solid Color & Gloss
spectro-guide
micro-gloss XS
The perfect fit for small parts

Your Benefits

- Small port – 2 x 4 mm
  The gloss of small and large parts will finally fit together

- Unsurpassed Performance
  Best in temperature control – reliable and stable results from 10...40 °C
Testing Physical Properties from Wet to Dry

- Cross-Cut Adhesion
- Applicators
- Drawdown Test Charts
- Pendulum Hardness
- Film Thickness
- Flow and Dip Cups
NEW

byko-visc

Complete line of rotational viscometers

Take Control of your Viscosity
No matter what your application or measurement tasks are, the byko-visc line offers the right solution.

The specialist for high-shear viscosity

Cone & Plate Models
• In-depth analysis of small sample volumes
• Variable speeds
• Sample temperature control
• Easy to clean

The specialist for architectural paints

byko-visc DS
• Digital Stormer Viscometer
• Easy to use
• Displays Krebs Units, Centipoise and Gram Units at the same time

The all-rounders for QC and R&D tasks

byko-visc Basic to Premium
• User calibration function means no downtime and no costs for sending your viscometer away
• Multiple accessories to expand viscosity range, change sample size and temperature
• Quick Disconnect for fast spindle change

Take Control of your Viscosity
No matter what your application or measurement tasks are, the byko-visc line offers the right solution.
BYK Passes on its Knowledge

03.04.
European Coatings Congress
10.00–10.30 h
Dr. Guillaume Jaunky
Seeking additives to render the surface of coatings hydrophobic or hydrophilic!

04.04.
Hall 1, Booth 1-131
10.30–10.50 h
Heiko Juckel
Make an economic epoxy easy-to-clean and robust

04.04.
Hall 1, Booth 1-131
13.50–14.10 h
Holger Wach
Highest matting agent loading with outstanding viscosity reduction in 100 % UV-curing coatings: Utopia or reality?

04.04.
Hall 7, Booth 7-726
14.10–14.30 h
Brigitte Weber/
Carsten Nagel
BYK sustainable: regulatory challenges

04.04.
Hall 5, Booth 5-353
14.50–15.10 h
Heiko Juckel
“Colorful” corrosion protection and high stain resistance with waterborne coatings
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<td>Marcel Krohnen</td>
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BYK by Numbers

About 1,000 Samples a Day

More than 35 Laboratories Across the Globe

15 Specialized End-Uses

9 Percent Average Increase in Sales per Year

More than 145 Years of Expertise

About 2,100 Employees Around the World
What do we mean by... Innovation?

Innovation to us means, for instance, being able to offer our clients the latest generations of additives. To do this we invest about eight percent of our annual turnover in research and development – this is three times more than most in the sector. Research & development and application technology staff make up 22% of our workforce.
What do we mean by... Expertise?

We demonstrate our expertise, for example, in more than 40 customer seminars a year, providing valuable know-how and opening up new perspectives, product solutions and application techniques for the participants and their companies.

www.byk.com
What do we mean by... 
Closeness?

We are close to our customers around the world but develop close customer relationships locally: decentralized structures enable us to provide tailored customer solutions – exchanging information on an international basis ensures our customers benefit from unique expertise right on their doorstep.
Welcome to the Interactive World of BYK Additives.

Our multimedia brochures support your work with interactive graphics, fascinating animations and videos to illustrate chemical processes.
BYK Highlights at the ECS
Highlights in Nuremberg

Time to Explore the City
Imperial Castle

The Imperial castle (Kaiserburg) is Nuremberg’s most famous landmark. In the morning you’ll have it pretty much to yourself and be able to explore at your leisure. The highlight: the amazing view over the city.

Easter Market

A stroll around the Easter market. It was established in 1424 and is Nuremberg’s oldest market. Stall holders sell ceramics, textiles, sweets and much more. Take a short lunch break at one of the food stalls.

Albrecht Dürer Stube

The traditional inn delights guests with its ambiance and hospitality – and, of course, good food. The specialty of the region is Schäufele, a roasted shoulder of pork with crackling. Tip: reserve a table as it is usually very popular.

Old Town

It’s well worth a walk through the old town. Marvel at the many historical buildings. In the afternoon, enjoy a coffee and cake in one of the lovely cafés.
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