BYK
Additives & Instruments

Substance for Success.

Product Guide CM-G 20

Additives for “Greener” Closed Mold Applications

Greenability

A member of ALTANA

Greenability in Closed Mold Applications

Although there is no broadly accepted, universal "green" standard, the term "green" is already widely used in the industry. In the field of composites, the word of "green composites" is spreading rapidly as well.
This not only affects the resin base but also fibers and additives.
As the leading additive supplier for reinforced plastic solutions, BYK will support their customers in achieving their "green" goals towards any specific environmental standard.

"Greenability" is how we define our commitment to environmentally-friendly systems. Greenability is our ability to help our customers develop greener products. We have had additives for environmentally-friendly systems in our portfolio for decades now, and today more of our research and development activities are dealing with this topic. We use a number of renewable resources as raw materials in our additives and our focus has always been on delivering high performance products.
The percentage of renewable materials in a product is a key indicator used to evaluate the eco-friendliness of a product. This factor also plays an important role in the development of green composites.
Thanks to the intensive product and application research, BYK is already offering its customers additives for different reinforced plastics based on renewable materials.
The newly developed processing additives for Closed Mold applications already contain a hich percentage of renewable materials.
These processing additives are up to 90 % based on "green" chemistry:

Product name	Product group	Non-volatile matter (in %)	Percentage of renewable raw materials (in %)
BYK-P 9050	Processing additive for low fogging headlamp BMC	> 98	90
BYK-P 9051	Processing additive for low fogging headlamp BMC	99	87
BYK-P 9060	Processing additive for LS SMC	> 96	64
BYK-P 9065	Processing additive for LS SMC	> 97	91
BYK-P 9080	Processing additive for LP and Class A SMC	98	71

Looking for information on additives based on renewable raw materials?
We have detailed information for you at **www.byk.com/renewable.**

Would you like to talk to a specialist on this topic?
Our Green Experts will be glad to assist you further: **GreenExperts.BYK@altana.com.**

Looking for suitable additives for greener systems?
Please find our product recommendations at **www.byk.com/greenability.**

If your goal is to obtain perfectly molded parts, it is important to control the whole production process. Thus modern processing additives do not only meet partial requirements but influence the entire manufacturing process.
Processing additives influence more than just one property, which in turn reduces the number of possible raw materials.

In addition, your benefits are:

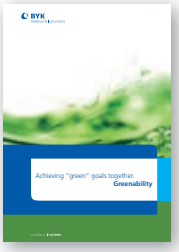
- Easier raw material handling compared to the use of the stearates:
  - the processing additives completely replace the traditionally used stearates working as internal mold release agent.
- Lower scrap rate:
  - reduced impact on the environment by saving energy (heat, electricity) and reducing waste.
- No sanding after molding for parts to be painted or bonded.
  - cost savings in time and materials.
- Low influence on total cost due to low dosages.

In addition to "green" processing additives, we can also help with other additives in order to obtain "greener" composites:

1. The use of BYK wetting and dispersing additives allows for a reduction of the total amount of styrene in your formulations, which positively affects the VOC and odor of the molded products.
2. BYK-Additives can assist in formulating composites with natural fibers.

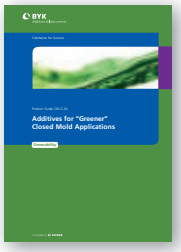
BYK technical service and R&D are focused on "green". New formulations based on "green" additives and"green" raw materials are ongoing and have a high priority.

B-1



B-G 5

CM-G 20



- **Greenability Overview B-1:**
  We help our customers achieve their "green" goals through our knowledge, service and range of products.
- **Product Guide B-G 5: Additives Based on Renewable Raw Materials**
  Summary of BYK additives with details regarding the percentage of renewable resources.
- **Product Guide CM-G 20: Additives for "Greener" Closed Mold Applications**
  Summary of BYK additives that can be used for the formulation of "green" closed mold applications.

Products and Applications

BYK Additives

Product Range Additives:

- Additives to improve surface slip, leveling and substrate wetting
- Adhesion promoters
- Defoamers and air release agents
- Foam stabilizers
- Processing additives
- Rheological additives
- UV-absorbers
- Viscosity depressants
- Waxes
- Wetting and dispersing additives for pigments and extenders

Application Areas:

Coatings Industry
- Architectural Coatings
- Automotive Coatings
- Industrial Coatings
- Can Coatings
- Coil Coatings
- Wood & Furniture Coatings
- Powder Coatings
- Leather Finishes
- Protective & Marine Coatings

Plastics Industry
- Ambient Curing Systems
- PVC Plastisols
- SMC/BMC
- Thermoplastics

PUR Industry
- C.A.S.E. Applications
- PUR Foams

Printing Ink Industry
- Flexo Inks
- Gravure Inks
- Silk Screen Inks
- Offset Inks
- Overprint Varnishes

Paper Coatings
- Impregnation
- Coatings

Adhesives & Sealants

Construction Chemicals

Pigment Concentrates

Raw Materials for Manufacturing of Release Agents

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BYK Instruments

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- Gloss/Appearance
- Color

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BYK instruments – the complete solution for the coatings and plastics industry.

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