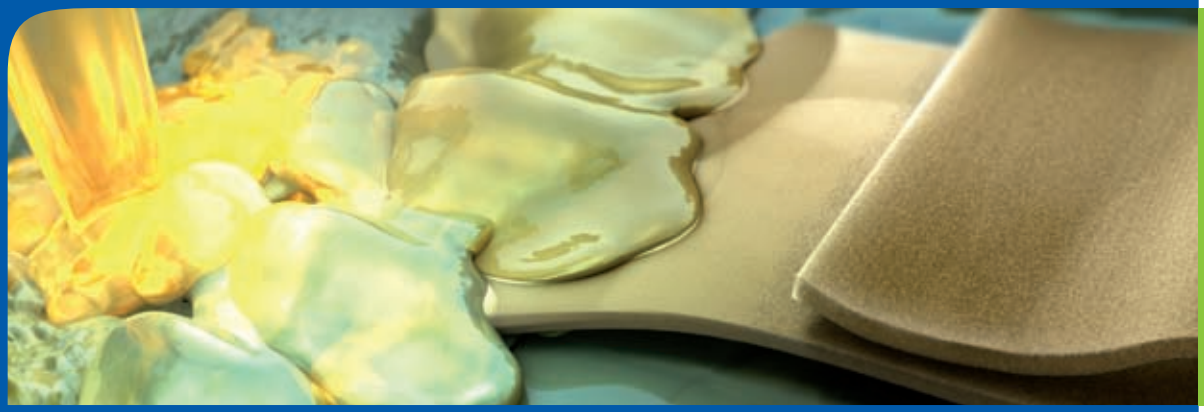
BYK
Additives & Instruments

Substance for Success.



Technical Information PVC-TI 7

# Processing Additive

PVC Plastisol Applications

A member of ALTANA

# BYK-P 4100

## An Additive to Improve and Influence the Processing of PVC Plastisol Applications

### What does "Improving or Influencing the Processing of PVC Plastisol" mean?

It improves the release properties
- from metal parts (e.g., gelling drum)
- from release paper
- from flat screens and molds

It can influence the cell structure of chemically blown foams
- to improve the indentation recovery
- to increase air permeability

### Additional Benefits of BYK-P 4100

- no negative influence on intercoat adhesion
- free of silicones, stearates or waxes
- FDA § 175.300 and EU-Dir 2002/72EC compliant

### BYK-P 4100 in Comparison to Commonly Used Products

| | Silicones, waxes, stearates | BYK-P 4100 |
|---|---|---|
| **During processing** | • incompatible with PVC<br>• risk of migration, plate out<br>• good release properties | • more compatible with PVC<br>• no plate out<br>• excellent release properties |
| **Foam cell structure after processing** | • no influence on open cell structure, indentation recovery or foam breathability | • more open cells resulting in better indentation recovery and increased air permeability |

figure 1

### Comparison of Mechanism

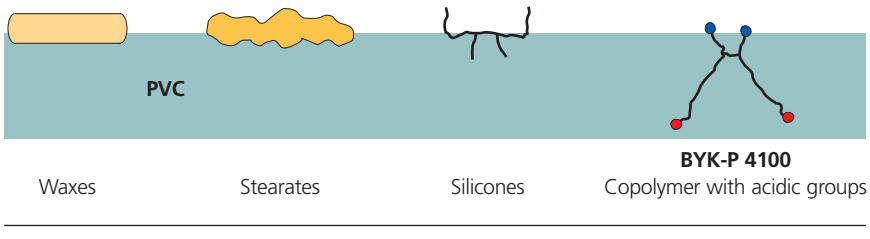



figure 2

### How to Start when Using BYK-P 4100 for Release:

To improve the release properties of a pre-gelled or gelled plastisol from a drum, to obtain more turns or uses of release paper and better flat screen or mold release, we would recommend starting with a dosage of 0.1% and 2.0% depending on the formulation. A typical dosage is 0.5%.

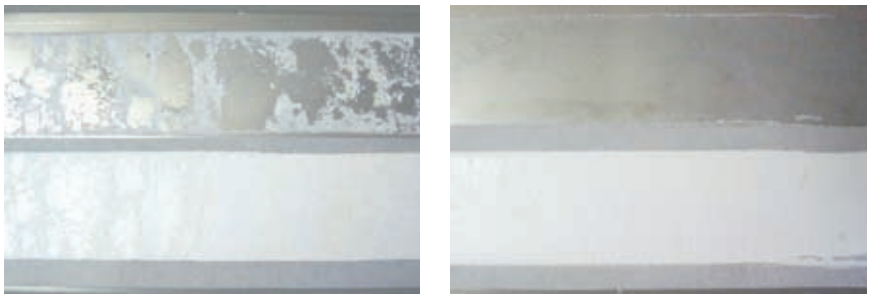
### Recommendations for Chemical Foams:

Concerning the use of BYK-P 4100 to achieve an open cell structure to improve indentation recovery and air permeability, the following needs to be considered.

Only certain PVC types are recommended for open cell foams. An open cell structure can only be achieved, when formulation ingredients and process parameters are balanced to each other. The use of BYK-P-4100 can lead to increased water absorption.

A recommended starting dosage, depending on the PVC resin type, is between 1% and 2%.

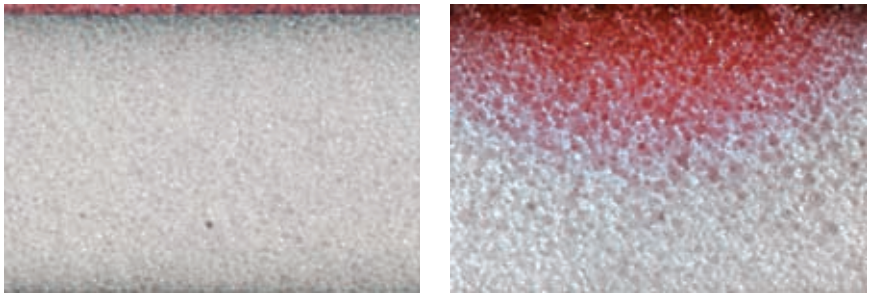
### BYK-P 4100 Improves the Release from, e.g., Metal Surfaces



Control | 0.5% BYK-P 4100

figure 3

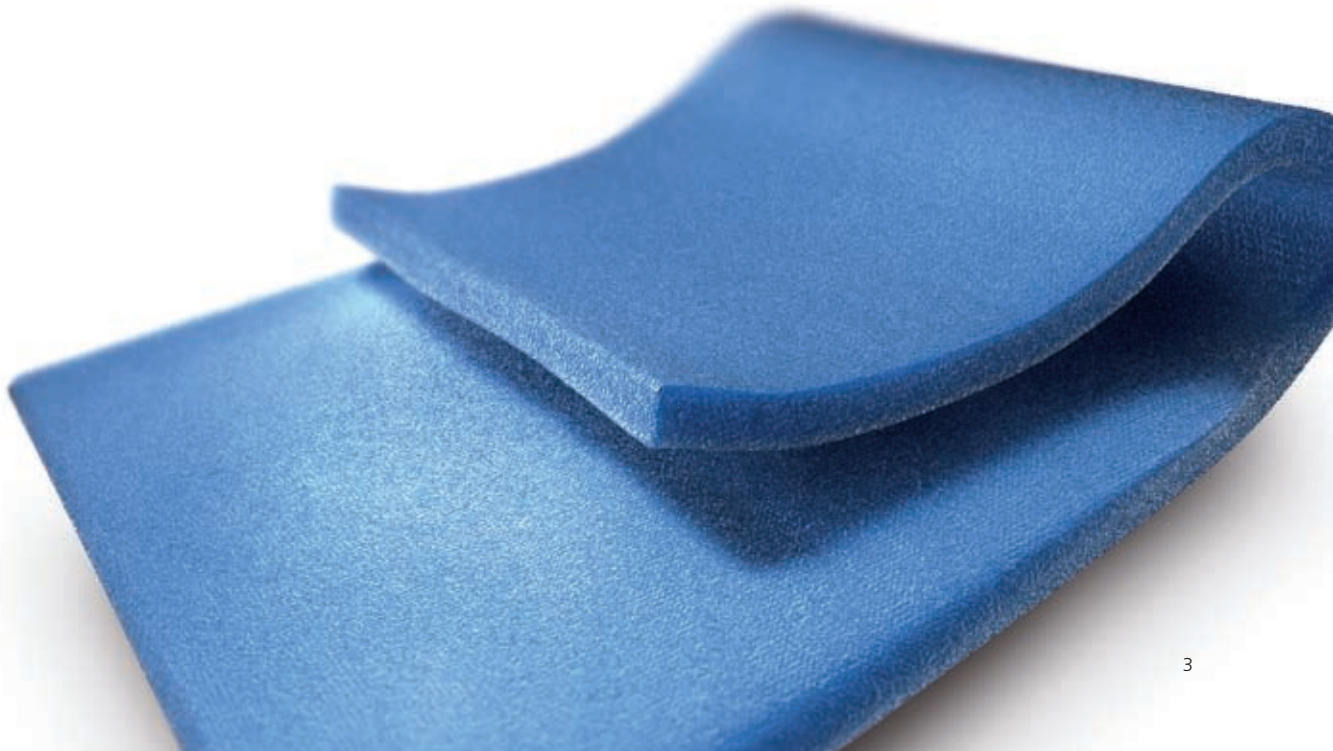
### Cross Section of a Chemical Foam Formulation



Control
- closed cells on the surface
- no water absorption

1% BYK-P 4100
- open cells on the surface
- high water absorption

figure 4



# Products and Applications

## BYK Additives

Additives are used during the production of coatings, printing inks and plastics to optimize the production process and to improve the quality of the final product.

**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**
- Ambient curing resins (FRP)
- Architectural coatings
- Automotive OEM
- Automotive refinishes
- Can coatings
- Coil coatings
- Color masterbatches
- Industrial coatings
- Leather coatings
- Marine paints
- Molding compounds
- Paper coatings
- Pigment concentrates
- Polyurethane foams
- Powder coatings
- Printing inks
- Protective coatings
- PVC plastisols
- Thermoplastics
- Wood and furniture coatings

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