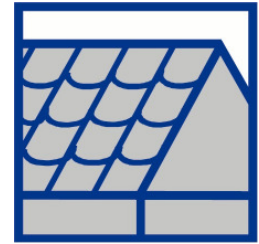


## Porosity inducing agents



# CELLOTIN, PORLAT, SCHAUMUNGSMITTEL

### Application

The use of porosity inducing agents serves for a targeted adjustment of the **pore size**, **pore volume** and **pore distribution**.

Depending on the individual case and application, porosity inducing agents can be used to **reduce cracks and shrinkage** or as agents for **uniform and/or faster de-watering**.

Depending on technical requirements, various **particle sizes** and respectively **fiber lengths and thicknesses** are available.

### Mode of action

The porosity inducing agents from Zschimmer & Schwarz are composed of **acryl glass**, **cellulose** and **polypropylene fibres**, or **fatty alcohol sulfate preparations**.

Under thermal stresses, the porosity inducing agents dissolve dependent upon temperature, kiln atmosphere and time, **leaving defined pores**.

With **acryl glasses**, no de-polymerization occurs up to temperatures of approx. 150  C. This begins with relatively high speed, at temperatures above 180  C. In an oxidizing atmosphere, the final result is a **residue-free decomposition to H<sub>2</sub>O and CO<sub>2</sub>**.



ZSCHIMMER & SCHWARZ  
GmbH & Co KG  
CHEMISCHE FABRIKEN

Max-Schwarz-Stra e 3-5  
56112 LAHNSTEIN/GERMANY  
Fon +49 (0) 26 21/12 485  
Fax +49 (0) 26 21/12 403  
[www.zschimmer-schwarz.com](http://www.zschimmer-schwarz.com)



**Cellulose fibres** are manufactured from secondary grown raw materials. In the drying process, the water transport occurs along the interface between the fibre and solid material or through the fibre itself. The product operates by **forming de-watering canals** that allow **fast and uniform drying** of the body from the inside through to the surface. Thus, distortion during drying because of partially differing evaporation rates, and the possible destruction of the shaped body due to existing evaporation stresses, is avoided. The **microporosity** induced by the cellulose fibres, as a result of their decomposition, is favourable for the degassing of the crystallization water during subsequent sintering of the ceramic parts.

**Polypropylene fibres** are products of crude oil synthesis. The surface of the poly-propylene fibres from Zschimmer & Schwarz is, thanks to a special treatment, easily wetted. Therefore, these fibres can be mixed into the bodies without problems. The achieved **homogeneous distribution** in the dry mix remains also when mixing with water.

**Fatty alcohol sulfate preparations** from Zschimmer & Schwarz are anion-active surfactants. Their effect is based on the **reduction of the surface tension** of water allowing the production of foam ceramics by the casting process.