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## **Investigations on the Anisotropic Pressure Propagation in Polymer Granular Material**

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The pressure propagation in polymer bulk materials (powder, grit or pellets) is not isotropic. Due to frictional effects, internal movements and plastic deformation the applied axial pressure decreases with increasing filling height. Additionally the pressure normal to the direction of the load application is not equal to the applied force. The ratio of the pressure measured normal to the applied pressure and the applied pressure gives a coefficient of pressure anisotropy. The knowledge of this coefficient is, for example, important for the calculation of the pressure build up in the solid conveying zone in single screw extruders. Two apparatus are presented for the investigation of the pressure behaviour in polymer bulk material over a wide pressure range. The influence of the temperature was investigated from room temperature up to 120°C. The material behaviour of different investigated polymer types show a great dependence on pressure and temperature.