



## Process Development for the Reactive Injection Moulding of Caprolactam Intermediates

By Lars Fredrik Berg

Fraunhofer Verlag Dez 2011, 2011. Taschenbuch. Condition: Neu. Neuware - In order to fulfil the need for efficient large volume capable production technologies for high performance composite structures, a new processing technology has been developed. The process is based on the injection moulding technology but differs from this known processing technology by enabling the production of continuous fibre reinforced high performance composites with fibre volume contents of over 40 % by volume. The processing technology enables the processing of very low viscosity polymer intermediate products such as caprolactam which is mixed with suitable activator and catalyst additives prior to the injection into the mould cavity. After the infiltration of the continuous dry fibre preform in the mould cavity the polymer intermediate system undergoes an anionic in-situ polymerisation to form the engineering thermoplast polyamide 6. The developed processing technology utilises the automated features of the injection moulding machine to enable a more efficient process than the current available state of the art processing technologies which are used to produce continuous fibre reinforced thermoplastic composites such as the resin transfer moulding techniques. Thereby the overall goal for the process development is to reduce the process cycle time and the labour required to...



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