



Zuraida Ahmad

SAGO

(Metroxylon Rottb)

And Its Applications

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Sago (*Metroxylan Rottb*) and Its Applications

Editor
Zuraida Ahmad



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Chapter 7

Feedstock Preparation of Injection Moulded Stainless Steel Using Biodegradable Starch Binder

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Preview. A water atomised 316L stainless steel powder has been evaluated in the context of the metal injection moulding (MIM) process using a locally based binder system; biodegradable starch. The data obtained on powder characteristics and feedstock preparation essentially conform to the standard requirement of MIM processing. Injection moulding was successfully conducted using a powder loading of 0.62. Binder debinding was performed using solvent extraction and thermal method. Results show that water atomised powder could be sintered to a maximum of 95% of theoretical density at the sintering temperature of 1360°C for 1 hour. Specimen composed of water atomised powder exhibit large shrinkage owing to the lower green density associated with poor packing property of the powder.

Introduction

It has been established that gas atomised SS powder are suitable for MIM processing due to their high packing density and associated feedstock rheology [1-4]. But the cost and low interparticle friction (which affect component shape retention) are disadvantages of gas atomised powder. In contrast, German (1990) reported that the water atomised powder has a lower cost and non-spherical particle shape,