Solvent debinding is one of a crucial stage in Metal Injection Moulding (MIM) process. This process begins with the removal of the soluble binder components by using solvents such as heptane or hexane. In solvent debinding process, unsuccessful to achieve maximum binder removal will cause a defect to the compact such as crack and swelling. So to have an optimum solvent debinding parameters are very important to improve the quality of the compact. Optimisation of solvent debinding process parameters for MIM of Stainless Steel 316L has been testified in this study. Gas atomised stainless steel 316L powder was mixed with a multicomponent binder in a twin blade mixer at a temperature of 150 °C for 90 minutes. The feedstock was successfully injected at the temperature of 150 °C. The green compacts were kept in n-heptane for eight different debinding times ranging between 30 to 240 minutes at temperatures of 40, 50, 60 and 70 °C to remove the primary binder components. From the result, the optimum temperature and time for solvent debinding were recorded at 60 °C and 240 minutes. Solvent debinding temperature and time give a significant effect on the rate of paraffin wax removal.