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粉末注射成形粘结剂组分相容性的热力学判据

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摘要: 对粉末注射成形粘结剂组分的热力学参数进行了计算, 并通过实验观察得到了组分相容性的判据。分别以PVB, EVA, PMMA为高分子组分, 讨论了它们与低分子量组分PEG的相容性, 并通过混炼机混炼和偏光显微镜观察, 得到了 $\Delta G/T < 1.5$ 可工艺相容、 $\Delta G/T > 3.0$ 工艺不相容的热力学判据。

关键字: 粉末注射成形; 热力学; 相容性; 粘结剂

Thermodynamics calculation of binder ingredients for powder injection molding

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Abstract: Thermodynamic parameters of binder ingredients for powder injection molding were calculated. These ingredients of binder were mixed in order to get a means to determine theoretically the compatibility of ingredients. Polymers, such as PVB, EVA and PMMA were used respectively to mix with PEG. The micrograph of PEG-PMMA mixtures is also adopted to certify that when $\Delta G/T < 1.5$, binder ingredients are compatible, while $\Delta G/T > 3.0$, binder ingredients are incompatible.

Key words: powder injection molding; thermodynamics; compatibility; binder

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