

### 论文摘要

中国有色金属学报

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## Zn-Mn和Zn-Ti二元合金热力学性质

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**摘要:** 在考虑理论计算合金形成热的各种影响因素的基础上, 用Miedema二元合金生成热模型计算了彩色热镀锌用Zn-Mn和Zn-Ti二元溶液的混合焓 $\Delta H_{\text{mix}}$ 与添加元素的摩尔分数之间的关系; 利用Tanaka近似关系式及一些基本热力学关系计算了上述两个二元体系的过剩混合熵 $\Delta S_{\text{mix}}^E$ 、过剩混合自由能 $\Delta G_{\text{mix}}^E$ 及各组元的活度。结果表明, Zn-Mn和Zn-Ti两溶液相对于理想溶液都有很大的负偏差。

**关键词:** 彩色热镀锌; 溶液; 热力学性质

## Thermodynamic properties of binary alloys of Zn-Mn and Zn-Ti

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**Abstract:** Considering different factors that affect the formation heat of binary alloys, the relationship among Zn-Mn and Zn-Ti formation heats and mole fraction of additives were obtained by Miedema's mode;  $\Delta H_{\text{mix}}$ ,  $\Delta G_{\text{mix}}^E$  and activities of the two systems were calculated by Tanaka model and some relationships of thermodynamics. The results indicate that Zn-Mn and Zn-Ti solutions have a rather large negative deviation relative to ideal solution.

**Key words:** coloration hot dip galvanization; solution; thermodynamic properties

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