

使用化学参考物质计算和阐明元素的标准化学放射本能

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摘要:

Exergy is the amount of work obtainable when some matter is brought to a state of thermodynamic equilibrium with the common components of the natural surroundings by means of reversible processes, involving interaction only with the above mentioned components of nature. This paper presents standard chemical exergy values for 85 elements. Reference species in the atmosphere (air), dissolved in the hydrosphere (oceans), and contained in the lithosphere (minerals) are used for these calculations. Standard chemical exergy values of elements were calculated from tabulated values obtained for standard conditions (an ambient temperature of 298.15 K and an atmospheric pressure of 0.1 MPa). Very low concentrations of elements in the atmosphere and oceans and the abundance of elements in the Earth's crust are no longer used in determining reference states for chemical elements. Liquid and gas mixtures generally are not useful as reference states. As a result of the work in this paper, a table of the chemical exergy values of many elements in the periodic table under standard conditions was tabulated.

关键词: Thermodynamics Chemical exergy Reference species Element

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1. 郭源;李永军;夏熙;张校刚;何茂霞.外在因素对TiO₂膜电极/溶液界面CPE行为的影响 [J]. 物理化学学报, 2001,17(04): 372-376

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