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Titolo	Thermophysical properties of multicomponent liquid alloys / / Jurgen Brillo
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Lingua di pubblicazione	Inglese
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Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Frontmatter -- Acknowledgement -- Contents -- 1. Introduction -- 2. Experimental methods -- 3. Density -- 4. Surface tension -- 5. Viscosity -- 6. Inter-property relations -- 7. Application examples -- 8. Conclusions -- A. Data -- B. Redlich-Kister parameters -- Bibliography -- Index
Sommario/riassunto	The book gives an understanding on how thermophysical properties change as function of alloy composition and complexity. In order to reach this goal, data on density, surface tension, and viscosity as functions of alloy composition and temperature are measured and discussed for pure liquid elements, liquid binary-, and ternary alloys. This book reviews recent achievements in the field of thermophysical property measurements of liquid multicomponent alloys. The work is centered on the question of whether the dependence of these properties on material composition can be clarified in the liquid state, as the vast majority of technically interesting alloys are multicomponent. In order to obtain a detailed understanding of the macroscopic behavior of liquid materials, a precise knowledge of their thermophysical properties is a fundamental prerequisite. The role of containerless measurement methods, such as electromagnetic- or electrostatic levitation, are therefore, particularly emphasized. Through

	examples of density, surface tension and viscosity, mixing behavior is studied by moving stepwise from mono-atomic-, via binary- to ternary systems. It is hereby investigated whether common trends can be identified among similar systems and if the properties of a multicomponent alloy can be related to those of its subsystems. Established models are tested and validated. Inter-property relations, such as the Stokes-Einstein-relation, are reviewed and critically discussed. Finally, application examples are described. The book contains a useful data collection dedicated to the practitioner, the process engineer and devoted materials simulator. The present work contributes to a deeper understanding of the liquid phase and its thermophysical properties and to an improvement of Computer Aided Materials Design from the Melt. Also of interest titles: Benvenuto, Alloys and Metals, 2016 Davim (ed.), Metal Matrix Composites, 2014 Davim (Ed.), Machinability of Fibre-Reinforced Plastics, 2015

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Collana	Senate document / 22nd Congress, 1st session. Senate ; ; no. 24 [United States congressional serial set] ; ; [serial no. 212]
Altri autori (Persone)	SmithSamuel <1752-1839> (Jacksonian (MD))
Soggetti	Revenue Factory and trade waste Foreign trade promotion Foreign trade and employment Imports Tariff Financial statements Legislative materials.
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