



The SGTE casebook: Thermodynamics at work

(Second edition)

Edited by K Hack, GTT- Technologies, Germany

- this updated and revised edition explores theoretical background to thermodynamic modelling
- practical applications are provided, including types of high-temperature corrosion
- valuable reference for the power and microelectronics industry

The Scientific Group Thermodata Europe (SGTE) is a consortium of European and North American research groups developing thermodynamic databases and software to model the thermodynamic properties of metals and other materials. Understanding these properties is critical to improving the processing of metals and their performance in such areas as resistance to high-temperature corrosion.

This substantially revised new edition explores both the theoretical background to thermodynamic modelling and its wide range of practical applications. These applications include the analysis of hot salt and other types of high-temperature corrosion, understanding the loss of corrosion resistance in stainless and other types of steel, the processing of steels, as well as the use of thermodynamics to improve the functionality of materials for microelectronics and lighting applications, and in the analysis of nuclear safety issues. New case studies also illustrate applications to kinetically-controlled processes such as the solidification and heat treatment of alloys as well as the production of silicon and titanium oxide pigment.

The SGTE casebook is a valuable reference for those manufacturing steels and other materials, those using materials in high-temperature applications such as the power industry and in other areas such as microelectronics and lighting.

Woodhead Publishing Ltd

ISBN 1 84569 215 2

[ISBN-13: 978 1 84569 215 5]

January 2008, 488 pages 234 x 156mm hardback

£145.00 / US\$290.00 / €220.00

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