

1. Record Nr.	UNINA9910739469303321
Autore	Qasem Naef A. A.
Titolo	Thermodynamic and Thermophysical Properties of Saline Water : Models, Correlations and Data for Desalination and Relevant Applications // Naef A. A. Qasem [and three others]
Pubbl/distr/stampa	Cham, Switzerland : , : Springer, , [2023] ©2023
ISBN	3-031-35193-2
Edizione	[First edition.]
Descrizione fisica	1 online resource (331 pages)
Collana	Springer Water Series
Disciplina	551.14
Soggetti	Saline waters Thermodynamics
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di contenuto	Introduction -- Density -- Heat Capacity -- Entropy -- Latent Heat -- Boiling Point Elevation -- Vapor Pressure -- Viscosity -- Thermal Conductivity -- Activity Coefficient -- Osmotic Coefficient -- Surface Tension -- Electrical Conductivity -- Thermal Expansivity -- List of Nomenclature.
Sommario/riassunto	This book accommodates the existing correlations, data, and methods for thermodynamic and thermophysical properties of saline water, including multiple components at a wide range of salinity (reaching around 200 g/kg), temperature, and pressure. The correlations of each property are plotted against existing experimental data to judge the comparative accuracy of each within a given specific range of salinity, temperature, and pressure. An assessment to recommend some correlations is also conducted. New correlations for some properties are also proposed. This book helps to provide the saline water properties as needed for engineers, designers, and research for different areas, including desalination and water treatment. All the analytical analysis, thermodynamic analysis, and design models of the desalination technologies depend on saline water properties. As scientists and researchers working on different desalination technologies, the authors found it difficult to find all saline water properties in one source, including multicomponent and binary salty

solutions, under different conditions (salinity, temperature, and pressure). Therefore, the authors introduce this book to fill the gap in the open literature. This book compiles the thermodynamic and thermophysical properties of saline water, involving thermodynamic approaches, multicomponent models, and simple correlations and data, comparison between the correlations of properties in figures, recommendation of the most accurate correlations and methods, and the used codes to estimate these correlations and methods. It is expected that this book to be a principal source for all interests in desalination and water treatment subjects.
