

## Preface to the first German Edition

Heat transfer plants with organic media have often been able to replace or improve the classic steam-water operation. The possibility of transferring and closely controlling temperatures up to  $>300^{\circ}\text{C}$  has provided the heat transfer media technology with many new fields of application.

This growing application of heat transfer plants with liquid heat transfer media other than water has made it necessary to produce a summary of the specific peculiarities of this specialist field.

Heat transfer media are, in the widest sense, apart from water and steam, refrigerants, organic media, salt melts, liquid metals and hot gases. Only such plants will be described in this specialist book of operational techniques which have been primarily designed for the use of recirculating heat transfer media.

Because of the conversion of the standard systems from the "Technical Standard System" with the basic units of length (m), force (kp) and time (s) to the MKS system with the basic units of length (m), mass (kg) and time (s), a numerical difference results from the change of the basic unit of force (mass times acceleration) to mass owing to the acceleration due to gravity of 9.81. This factor of about 10 can, however, result in a value of the constants completely different from those in the usual equations because of the form and construction of the equation.

For this reason, the most important equations are given in both standard systems, the equations of the old system being enclosed in vertical lines on both sides | . . . |. This also permits to work easily with tables based on the "Technical Standard System".

The hydrodynamic and thermodynamic techniques are derived from the basic theoretical equations in such a way that the values required in design and practice, such as heat transfer coefficients, flow resistances, heat flow densities in the furnace, elongation equalization lengths, etc., can be directly taken from diagrams.

I hope that this book provides, also by the presentation of the problem in equations and illustrations which are for the largest part the "language" of technology, a genuine working basis for planning, expert advice and operation of heat transfer plants.

*Walter Wagner*