Instructions for Use of Tables

Each physical quantity is represented as the product of the numerical value and a unit of measurement. Thus, we can write some the unknown quantity X as:

$$X = \{X\}[X], \tag{1}$$

where $\{X\}$ is the numerical value and $[X]$ is the unit of measurement. Equation (1) could be written in the form of a fraction:

$$\{X\} = X/[X], \tag{2}$$

from which it follows that the numerical value $\{X\}$ is equal to the quotient of the physical quantity X and the unit of measurement, $[X]$. This is true for every physical quantity. For example, for the unknown physical quantity of length L, we can write:

$$L = \{L\}[L], \tag{3}$$

then the numerical value $\{L\}$ is equal to:

$$\{L\} = L/[L]. \tag{4}$$

For a known quantity, for example, when the distance between two cities is 580 km, then according to equation (3), we will write:

$$L = 580 \text{ km,}$$

where $580 = \{L\}$, the numerical value, and km = $[L]$ is the unit of length. According to equations (2) and (4) the numerical value 580 is equal to the quotient of quantity L and units of length, km, namely:

$$580 = L/\text{km}$$

Numerical values in the tables in this book are actually the numerical values of physical quantities, that is that the numerical values in the table column are quotients of the physical quantity and the unit of measurement in the column head of the table. For example, on page 10, table 1.8, in the column for the specific heat capacity, 0.314 is in the first row, that is the numerical value which is equal to the quotient of the quantity c and the unit of measurement kJ/(kg K) in the table head in the same row, namely:

$$0.314 = \frac{c}{\text{kJ(kg K)}}.$$

Hence it follows that the value of the specific heat capacity is:

$$c = 0.314 \text{ kJ/(kg K)}.$$

In the same way we can read any numerical values from the tables and determine the quantitative values of corresponding quantities.

This tabular way of representing physical quantities is the most suitable because there is no need to state separately the units to which the numerical values in the tables refer.