

### Exercise 1: Extra information

The main folder contains several data files. Numeric data is stored in binary file format for quick reading into computer memory. The binary file format can be read by any programming language. The main data file is tc-ds633.bin which holds all thermodynamic data for the THERMOCALC (tc) dataset (ds) version 633. This table holds data for pure phases in rows, with type of thermodynamic data in columns, similar to the table in Holland and Powell (2011). A text file holds the names of the rows, and another text file holds the name of the columns. You can read the text files to see what phases exist in the database. A binary data file called nphs-ds633 holds the chemical composition of each phase in rows. A list of the elements in each row of this table can be read in elements-ds633. Molar mass of the elements is stored in a binary file called elemass-ds633, corresponding to each element in the list.

A MATLAB program is provided to show how to read the data and to do various calculations. The abbreviations in the names-ds633 file correspond to the names given in the paper of Holland and Powell (2011). These abbreviations are the authors convention and do not necessarily follow any internationally recognized abbreviation such as Whitney or Kretz. Optionally, users can make their own list of names, by looking at the Holland and Powell (2011) paper. Note, that in tc-ds633 some phases are later added as the dataset contains updates so some abbreviations may not be found.