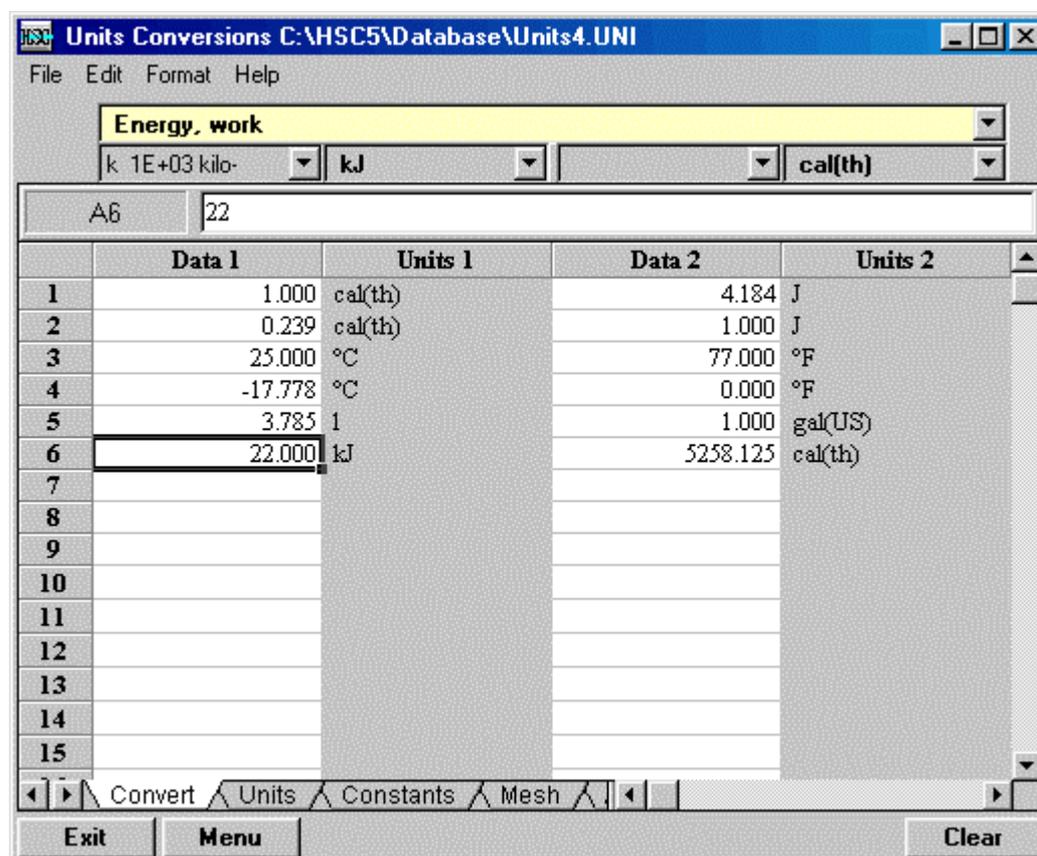## 26. UNITS MODULE

Traditionally, several types of energy, temperature, mass and volume units have been used in thermochemical calculations. Therefore, some inconvenient conversions are needed to compare the results from different sources. The new Units Conversion module is an easy tool for fast unit conversions in thermochemistry as well as in other engineering fields. The specifications of this module can be summarized as follows.

1.   Some 90 different quantities and 444 units are available. The user can easily add own units and coefficients into the conversion calculator database.

2.   The Units Module also offers data sheets for chemical constants, particle mesh sizes, air humidity and water pressure tables. These tables can be modified by the user according to personal requirements.

Units Conversions (Convert Sheet)

Fig. 1. Units Conversion module.

The user interface of the Units module is shown in Fig. 1. All the data is given in the workbook, which consists of six sheets. The first Convert sheet works as a simple units conversion calculator, which is used in the following manner:

1.   Select the quantity you are interested in, for example, **Energy**.
2.   Select the unit and prefix to be used in columns 1 and 2.
3.   Select the unit and prefix to be used in columns 3 and 4.

4.   Type the values into column 1 or 3. This will automatically show the converted value using the selected units. You can change the quantities, units and prefixes whenever you want, as seen in Fig. 1.

Units Database (Units Sheet)

Fig. 2. Database sheet for unit coefficients.

The unit calculator on the Convert sheet reads all the quantities and unit coefficients from the Units sheet, see Fig. 2. Three rows are reserved for one quantity, and up to 255 units in the columns can be used for one quantity. The name of the quantity is given in the first column, the quantity first row gives the name of the unit, the second one the abbreviation and the third one the conversion coefficient.

The user may easily add own quantities and units to this sheet. However, remember to save the worksheet if you want to use this new data later on.

Other Sheets

The Units workbook also contains other sheets:

1.   **Constants sheet**: Chemical and physical constants.
2.   **Mesh sheet**: Particle sizes in mesh and mm units.
3.   **Air sheet**: Air composition and humidity tables.
4.   **H2O sheet**: Water vapor pressure tables.

The user may also modify these sheets as well as add new sheets. The workbook must be saved with the **File Save** selection in order to use the new data later on.

Nearly all the same format, edit and printing properties, as well as resizing of the form, are available in the Units module.