# Basic operations – GCDkit Cheat Sheet

All GCDkit-related info is on http://www. gcdkit.org

Complete documentation – menu item GCDkit → Help

## *How to import data file*

- Data should be prepared as a table, e.g. in Excel
  *Samples must be in rows starting with unique sample name, in columns are geochemical data with a simple heading (SiO2, H2O+, Sr etc.) or meta-information (Locality, Petrology...)*
- Copy the table into Windows clipboard (Ctrl-C)
- Menu GCDkit → Paste data from clipboard

| | A | B | C | D | E | F | G | H | I | J | K | L |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Sample | Locality | Petrology | Symbol | Colour | SiO2 | MgO | Ba | Rb | Cs | Ta | Hf |
| 2 | Sa-1 | Mrac | bi-amph qtz diorite | 17 | 4 | 59.98 | 3.21 | 1037 | 76 | | | |
| 3 | Sa-2 | Mrac | bi-amph qtz diorite | 17 | 4 | 55.17 | 3.67 | 582 | 53 | | | |
| 4 | Sa-3 | Mrac | bi-amph qtz diorite | 17 | 4 | 55.09 | 3.52 | 0 | 66 | | | |
| 5 | Sa-4 | Mrac | bi-amph qtz diorite | 17 | 4 | 50.72 | 5.18 | 388 | 56 | 5.7 | 0.5 | 2.5 |
| 6 | Sa-7 | Teletin | bi-amph tonalite | 17 | 4 | 57.73 | 2.82 | 722 | 57 | 6.6 | 0.6 | 3.6 |
| 7 | Sa-10 | Krhanice | bi-amph tonalite | 17 | 4 | 64.21 | 1.86 | 1036 | 62 b.d. | | | |
| 8 | Sa-11 | Prosecnice | bi-amph tonalite | 17 | 4 | 63.72 | 2.13 | 1476 | 64 b.d. | | | |
| 9 | Sa-12 | Mrac | bi-amph tonalite | 17 | 4 | 57.73 | 3.22 | 1004 | 87 b.d. | | | |
| 10 | Sa-13 | Teletín | bi-amph tonalite | 17 | 4 | 59.05 | 2.33 | 998 | 45 b.d. | | | |
| 11 | Sa-22 | Teletín | bi-amph tonalite | 17 | 4 | 59.87 | 1.96 | 0 | 66 b.d. | | | |
| 12 | SaD-1 | Teletín | bi-amph qtz diorite | 18 | 4 | 52.90 | 3.89 | 1017 | 43 | 2.3 | 1.1 | 1.8 |
| 13 | SaD-2 | Teletín | bi-amph qtz diorite | 18 | 4 | 53.29 | 4.43 | 646 | 50 | | | |
| 14 | SaD-3 | Teletín | bi-amph qtz diorite | 18 | 4 | 53.34 | 4.56 | 654 | 34 | | | |
| 15 | SaD-4 | Teletín | bi-amph qtz diorite | 18 | 4 | 52.17 | 4.25 | 0 | 61 | | | |
| 16 | SaD-5 | Teletín | bi-amph qtz diorite | 18 | 4 | 52.33 | 4.04 | 0 | 49 | | | |
| 17 | SaD-6 | Teletín | bi-amph qtz diorite | 18 | 4 | 52.56 | 4.08 | 0 | 66 | | | |
| 18 | Gbs-1 | Pecerady | px-amph gabbro | 2 | 4 | 49.63 | 8.59 | 583 | 21 | | | |
| 19 | Gbs-20 | Pecerady | px-amph gabbro | 2 | 4 | 51.72 | 7.47 | 0 | 41 | | | |

Tabelle1  Tabelle2  Tabelle3

Bearbeiten                                                                 NF

*An example of Excel data file, ready to be imported into GCDkit. The table should be highlighted and copied to clipboard (Ctrl + C); in GCDkit then invoke a menu item GCDkit → Paste data from clipboard.*

- To load a data file (plain text, XLS, XLSX…), choose menu GCDkit → Load data file. You may like to set the working directory (default place where the data will be sought and any output will be saved) using menu File→ Change dir….

## *How to split data into groups*

*The assigned groups are used by many functions of the GCDkit*

- Menu Data handling → Set groups by… → … label
- Choose the desired parameter from the list in the R-Console, type in its sequence number or name into the dialogue window OK, or just press Enter to obtain the drop down list
  *Further possibilities for groups definitions are in the menu Data handling → Set groups by…*

## *How to assign plotting symbols and colours to individual samples*

- Colours and plotting symbols that will be used subsequently in all diagrams can be assigned to individual groups using: Plot settings → Symbols/colours by groups
- In the table fill numeric codes corresponding to desired symbols/colours for each group
- Close the window with the table (cross in the top-right corner)
  *Instead of symbols can be used also text strings directly*
  *Symbols and colours can be pre-defined in the input file in columns named "Symbol", or "Col", respectively.*
  *The relative size can be given in the column "Size"*

## *How to obtain a basic statistics*

- Menu Calculations → Statistics → Single variable …
  *Menu Statistics offers several additional functions for statistical description of the data file, e.g., summaries for major and trace elements or correlation matrices*

## *How to calculate norms (e.g. CIPW)*

- Menu Calculations → Norms… → CIPW

- The results can be copied into clipboard via menu GCDkit → Copy results to clipboard and pasted subsequently (Ctrl+V) into Excel or other Windows application

  *The same procedure applies also to calculation of Niggli numbers, Granite Mesonorm, Catanorm etc.*
  *Quicker is to choose the appropriate term from the menu, which appears after right-clicking the Console window*

## *How to plot a binary diagram*

- Menu Plots → Binary plot and then fill in the dialogue windows as appropriate;
- Analogously can be, using menu Plots → Multiple plots…→ 1+ vs. majors, created a set of Harker diagrams

  *Menu Plots contains a number of additional forms of graphical output, e.g. ternary diagrams, 3D plot, several varieties of spiderplots etc. If the data file contains Sr-Nd isotopic data, corresponding functions for their interpretation and plotting are available from menu Plugins → Sr-Nd isotopes.*

- Menus Plots → Classifications and Plots → Geotectonic offer several dozens of pre-defined classification and discrimination diagrams

## *How to edit a graph*

- Most of the **solitary diagrams** can be edited using the options in menu Plot editing (changing text labels, zoom, identification of data points, adding contours etc.).
- Any of the individual graphs within a single plotting window (a "**plate**") can be selected by graphical cursor (right click the plot window, menu item Select slot → Select another slot).
- The selected plot of the plate can be edited using the same menu, submenu Plot editing.
- The whole plate/all its diagrams can be changed from within the submenu Plate editing.

  *For both single plots and plates, only the last plotted window (marked "Active") can be modified.*

- Single graphical window can be saved into an external file right clicking on the window and selecting Save as Postscript. Subsequently the PDF, PS or EPS file can be imported into a graphical program such as CorelDraw! or Adobe Illustrator for final polishing.
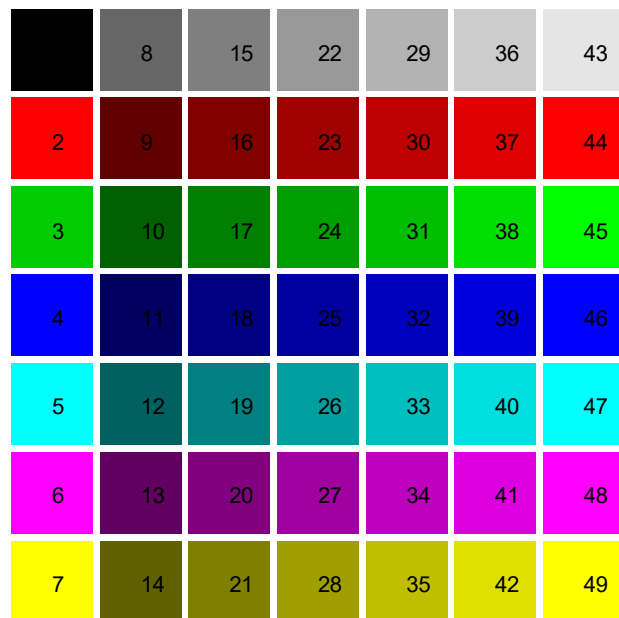
  *PostScript or PDF is to be preferred to Windows Metafile (WMF) or copying to clipboard, as it is much more accurate. Use the Export to PS (Colour) and Export to PS (BW) menu items from submenu Plate editing to produce "clean" version of your **plate**, if further editing is desired in a specialized graphical program.*



Available plotting symbols and their codes. These can be defined in the input file (in columns termed „Symbol"), or via menu Plot settings → Symbols/colours by groups and such alike.



Basic colours that can be used for plotting and their numeric codes. These can be specified in the input file (column named "Color" or "Colour"), or via menu Plot settings → Symbols/colours by groups. The English names ("darkgreen", "khaki") are also okay; choose Plot settings → Show available colours or type *colours()* to obtain their list.

| Code | Colour name |
|------|-------------|
| 0 | white |
| 1 | black |
| 2 | red |
| 3 | green |
| 4 | blue |
| 5 | cyan |
| 6 | magenta |
| 7 | yellow |
| 8 | grey |

*Enjoy!*
*V. Janoušek, V. Erban, C. M. Farrow*