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	Teletin	bi-amph tonalite	17	4	59.05	2.33	998	45	b.d.		
11	Sa-22	Teletin	bi-amph tonalite	17	4	59.87	1.96	0	66	b.d.		
12	SaD-1	Teletin	bi-amph qtz diorite	18	4	52.90	3.89	1017	43	2.3	1.1	1.8
13	SaD-2	Teletin	bi-amph qtz diorite	18	4	53.29	4.43	646	50			
14	SaD-3	Teletin	bi-amph qtz diorite	18	4	53.34	4.56	654	34			
15	SaD-4	Teletin	bi-amph qtz diorite	18	4	52.17	4.25	0	61			
16	SaD-5	Teletin	bi-amph qtz diorite	18	4	52.33	4.04	0	49			
17	SaD-6	Teletin	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.

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 graph can be saved into an external file right clicking on the window and selecting Save as Postscript. Subsequently the graph can be imported into a graphical program such as CorelDraw! or Adobe Illustrator.

  *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.*

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

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.

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.

Overview of regular expressions employed in searching and subsetting of the data (power users only)

Regular expression	Matches	Repetition operator	Preceding item will be matched
.	Any character	?	At most once (i.e. is optional)
^	Beginning of the expression	*	Zero or more times
$	End of the expression	+	One or more times
[ ]	Any of the characters given in square brackets	{n}	Exactly *n* times
[m-n]	Any character in the range given by *m* and *n*	{n,}	At least *n* times
		{n,m}	At least *n* times, but not more than *m* times

Enjoy!
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