

NAME

ElementalAnalysisTextFiles.pl - Perform elemental analysis using formula column in TextFile(s)

SYNOPSIS

ElementalAnalysisTextFiles.pl TextFile(s)...

```
ElementalAnalysisTextFiles.pl [-c, --colmode colnum | collabel] [-d, --detail infolevel] [-f, --fast] [-f,
--formulacol colnum | collabel] [-h, --help] [--indelim comma | semicolon] [-m, --mode All |
"ElementalAnysis, [MolecularWeight, ExactMass]"] [-o, --overwrite] [--outdelim comma | tab | semicolon] [
-p, --precision number] [-q, --quote yes | no] [-r, --root rootname] [-s, --startcol colnum | collabel] [
--startcolmode before | after] -v --valuecollabels [Name, Label, [Name, Label,...]] [-w, --workingdir
dirname] TextFile(s)...
```

DESCRIPTION

Perform elemental analysis using molecular formula column specified by a column number or label in *TextFile(s)*.

In addition to straightforward molecular formulas - H₂O, HCl, C₃H₇O₂N - other supported variations are: Ca₃(PO₄)₂, [PCl₄]⁺, [Fe(CN)₆]⁴⁻, C₃H₄N₂O₆+₂, Na₂CO₃.10H₂O, 8H₂S.46H₂O, and so on. Charges are simply ignored. Isotope symbols in formulas specification, including D and T, are not supported.

The valid file extensions are *.csv* and *.tsv* for comma/semicolon and tab delimited text files respectively. All other file names are ignored. All the text files in a current directory can be specified by **.csv*, **.tsv*, or the current directory name. The *--indelim* option determines the format of *TextFile(s)*. Any file which doesn't correspond to the format indicated by *--indelim* option is ignored.

OPTIONS

-c, --colmode colnum | collabel

Specify how columns are identified in *TextFile(s)*: using column number or column label. Possible values: *colnum* or *collabel*. Default value: *colnum*.

-d, --detail infolevel

Level of information to print about lines being ignored. Default: 1. Possible values: 1, 2 or 3.

-h, --help

Print this help message.

--fast

In this mode, the formula column specified using *-f, --formulacol* option is assumed to contain valid molecular formula data and initial formula validation check is skipped.

-f, --formulacol col number | col name

This value is mode specific. It specifies molecular formula column to use for performing elemental analysis on *TextFile(s)*. Possible values: *col number* or *col label*. Default value: *first column containing the word formula in its column label*.

-m, --mode All | "ElementalAnalysis,[MolecularWeight,ExactMass]"

Specify what values to calculate using molecular formula in *TextFile(s)*: calculate all supported values or specify a comma delimited list of values. Possible values: *All | "ElementalAnalysis, [MolecularWeight, ExactMass]"*. Default: *All*

--indelim comma | semicolon

Input delimiter for CSV *TextFile(s)*. Possible values: *comma* or *semicolon*. Default value: *comma*. For TSV files, this option is ignored and *tab* is used as a delimiter.

-o, --overwrite

Overwrite existing files.

--outdelim comma | tab | semicolon

Output text file delimiter. Possible values: *comma, tab, or semicolon* Default value: *comma*.

-p, --precision number

Precision of calculated values in the output file. Default: up to 2 decimal places. Valid values: positive integers.

-q, --quote yes | no

Put quotes around column values in output text file. Possible values: *yes or no*. Default value: *yes*.

-r, --root *rootname*

New text file name is generated using the root: <Root>.<Ext>. Default new file name: <InitialTextFileName>ElementalAnalysis.<Ext>. The csv, and tsv <Ext> values are used for comma/semicolon, and tab delimited text files respectively. This option is ignored for multiple input files.

-s, --startcol *colnum | collabel*

This value is mode specific. It specifies the column in text files which is used for start adding calculated column values. For *colnum* mode, specify column number and for *collabel* mode, specify column label.

Default value: *last*. Start merge after the last column.

--startcolmode *before | after*

Start adding calculated column values after the -s, --startcol value. Possible values: *before or after*.

Default value: *after*.

-v --valuecollabels *Name,Label,[Name,Label,...]*

Specify column labels to use for calculated values. In general, it's a comma delimited list of value name and column label pairs. Supported value names: *ElementalAnalysis, MolecularWeight, and ExactMass*.

Default labels: *ElementalAnalysis, MolecularWeight, and ExactMass*.

-w, --workingdir *dirname*

Location of working directory. Default: current directory.

EXAMPLES

To perform elemental analysis, calculate molecular weight and exact mass using formulas in a column with the word Formula in its column label and generate a new CSV text file NewSample1.csv, type:

```
% ElementalAnalysisTextFiles.pl -o -r NewSample1 Sample1.csv
```

To perform elemental analysis using formulas in column number two, use column label Analysis for calculated data, and generate a new CSV text file NewSample1.csv, type:

```
% ElementalAnalysisTextFiles.pl --m ElementalAnalysis --formulacol 2
--valuecollabels "ElementalAnalysis,Analysis" -o -r NewSample1
Sample1.csv
```

To calculate molecular weight using formula in column label Formula with four decimal precision and generate a new CSV text file NewSample1.csv, type

```
% ElementalAnalysisTextFiles.pl --m MolecularWeight --colmode collabel
--formulacol Formula --precision 4 -o -r NewSample1 Sample1.csv
```

To calculate exact mass using formula in column label Formula with four decimal precision, adding column for exact mass right after Formula column, and generate a new CSV text file NewSample1.csv, type

```
% ElementalAnalysisTextFiles.pl --m ExactMass --colmode collabel
--formulacol Formula --precision 4 --startcolmode after
--startcol Formula -o -r NewSample1 Sample1.csv
```

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SEE ALSO

AnalyzeTextFilesData.pl, InfoTextFiles.pl, ExtractFromTextFiles.pl

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