PerTable Help Contents

Most schools need a new periodic table of the elements wall chart, but these cost about a hundred dollars if bought through a science catalog.   And then the table may not be designed just as you like it. PerTable, a periodic table editor, is a free program that allows you to print a wall chart designed to your specifications.   The down side is summarized in the words "cut and paste".   Since the largest paper available to most printers is legal-size, and since most printers have a non-printing area of a quarter inch on at least two sides, you are looking at some serious trimming with a paper cutter.   Just keep saying to yourself, "I'm saving a hundred bucks, and I get just what I want."   And if that doesn't work, try "The students deserve a decent chart, and this is the only way they are going to get it."

Contents

Obscure Essential Information

When the mouse pointer turns into cross hairs on the <u>box display</u>, you can double-click the mouse button to edit the font of the field the pointer is over.

Push your secondary mouse button to display a <u>Group To Edit</u> pop-up menu.

When you choose the <u>Line Color button</u> or the <u>Diagonal Color button</u>, a font dialog box appears, but only the color has an effect.

Choose the menu item Printer Setup before you select <u>Print Displayed Element or Print Table</u>. The printer Setup button in the latter two should not be used.

Laser printer users: The option "Print Truetype As Graphics" must be selected.   To find this, select the Options button on the Printer Setup, or look in the Windows Control Panel under Printers.

The size of the table shown on the <u>Preview</u> screen depends on the setting of page boundaries.

The <u>State of the Art</u> screen will stay on top of other screens when you change its size.

You can change Unh to Sg, seaborgium, by changing <u>The Data File</u>.

<u>Font</u> sizes can be huge.   Try entering 1000.

File Menu

Besides exit, under Eile are options for loading and saving tables.   Four complete tables can be saved.   The data is saved in the file PERTABLE.INI in the Windows directory.   The title bar indicates which table is currently being edited.   The data saved in PERTABLE.INI is dependent on the resolution of the monitor.   If you copy your .ini file to another computer, you will get an error message and the program will end if the .ini file calls for fonts that are not available to that computer.

Save Table 1   Immediately saves the current table.   If Table 2 is being worked on, this would say **Save Table 2**.   This option does not allow the caption to be changed.

Save Table As   Asks whether the current table should be saved as Table 1, 2, 3, or 4.   Then prompts for a caption.   The table will not be saved unless it has a caption.   The caption will be more helpful later if it includes the size of the box, as in "3 X 5 inches, full color, no diagonal".

Load Table   When this is selected, the table numbers and captions are shown. Select the one to edit.

Exit   The program ends.   You are **not** prompted to save the current table.

Options Menu

The first three options determine which element to show.

Typical Element Shown   Shows an element belonging to the group being edited.   Repeated selection will cycle through all examples in a series.   The first element in the series belongs to just one group, where possible.   For example, Co has only the Basic properties; it is not a member of other groups.   Later elements in a series are members of other groups as well.   For example, Tc is a member of both the Basic and the "Short Half-life" groups.   If both Basic properties and the diagonal line are active, the elements B and Al will appear in the series to allow the diagonal line to be conveniently seen.   Be careful in this case, as both B and Al are poor representatives of Basic properties.

Group	Elements in Series
Basic Properties	Co, (B, Al), Tc, Hg
s-Block	Mg, H, Cs
p-Block	Al, Sb, S, F, Br
f-Block	Th, Np
Short half-life	Tc, Np
Metalloid	Sb
Non-metal	S, F, Br, H
Gas	Cl, H
Liquid	Hg, Cs, Ga, Br

Select Element Shown...   Prompts for the atomic number or symbol of the element to show.   The symbol can be in uppercase, lowercase, or a mixture.

Longest Strings Shown   This shows a box in which each field contains the longest string of characters in that field.   The fields are displayed using only Basic properties.   The program searches for the longest atomic number, longest symbol, longest name, and longest atomic mass in the entire table.   This is the "element" shown when the program starts.   It shows the strings used to determine the width of the widest column in the table.   Should you want to make a huge periodic table, this

"element" will make it easier to avoid making any columns too wide.

Diagonal Line   Displays the zigzag diagonal line that cleanly separates metals from non-metals.   When this option is selected, controls appear on the screen for setting the diagonal line properties.   You may decide that displaying both the diagonal line and the metalloid group is inconsistent, though some tables show both.

Period Numbers   Displays period numbers to the left of the first seven rows of the table.   If just a single element from the first column is printed, the period number will also print when this option is selected.   Period numbers use the same font properties as the 1 - 18 column heading.

Box Width Limited to Widest in	√ Column
Old Heading Style	Table (Fast)
Define Lanthanids/Actinides As	Table (Accurate)

Box Width Limited to Widest in   All the boxes in a column must be the same width, of course.   If Column is selected, the widest string of characters in each column determines that column's width.   If Table is selected, all columns will be the same width.   Accurately checking the width of all those strings can take a few moments, especially when using italic fonts.   To speed up processing, choose Table (Fast). The displayed column widths may then be a little bit off on the display, but will be accurate when printed.

Box Width Limited to Widest in	▶
Old Heading Style	√ 1A 2A 3A...8A 1B 2B 3B...8B
Define Lanthanids/Actinides As	1A 2A 3B...8B 1B 2B 3A...8A
	IA IIA IIIA...VIIIA IB IIB...VIIIB
	IA IIA IIIB...VIIIB IB IIB IIIA...VIIIA

Old-Style Heading This option has no effect unless the A and B style of Column heading is selected from the main screen control.   As you can see, four options are available.   Some tables have the noble gases labeled 0 (zero); that option is not available.

Box Width Limited to Widest in	▶
Old-Style Heading	▶
Define Lanthanids/Actinides As	Ce - Lu; Th - Lr
	√ La - Yb; Ac - No

Define Lanthanides/Actinides As Some tables show these groups one way, some another.   Some even show these groups as containing fifteen elements instead of fourteen; that option is not available.

Here is what the two options look like on the preview

screen.

Ce - Lu; Th - Lr:

56 Ba	57 La	72 Hf	73 Ta	74 W	75 Re	76 Os	77 Ir	78 Pt	79 Au	80 Hg	81 Tl	82 Pb	83 Bi	84 Po	85 At
88 Ra	89 Ac	104 Unq	105 Unp	106 Unh	107 Uns	108 Uno	109 Une								

58 Ce	59 Pr	60 Nd	61 Pm	62 Sm	63 Eu	64 Gd	65 Tb	66 Dy	67 Ho	68 Er	69 Tm	70 Yb	71 Lu
90 Th	91 Pa	92 U	83 Np	94 Pu	95 Am	96 Cm	97 Bk	98 Cf	99 Es	100 Fm	101 Md	102 No	103 Lr

La - Yb; Ac - No:

71 Lu	72 Hf	73 Ta	74 W	75 Re	76 Os	77 Ir	78 Pt	79 Au	80 Hg	81 Tl	82 Pb	83 Bi	84 Po	85 At
103 Lr	104 Unq	105 Unp	106 Unh	107 Uns	108 Uno	109 Une								

57 La	58 Ce	59 Pr	60 Nd	61 Pm	62 Sm	63 Eu	64 Gd	65 Tb	66 Dy	67 Ho	68 Er	69 Tm	70 Yb
89 Ac	90 Th	91 Pa	92 U	93 Np	94 Pu	95 Am	96 Cm	97 Bk	98 Cf	99 Es	100 Fm	101 Md	102 No

Group To Edit Menu

The "Group to Edit" menu is also available as a *pop-up menu*.   To pop it up, click the right mouse button (or left button, for a left-handed mouse) while the mouse is anywhere over the screen, except over a button, scroll bar, or check box.   The current group, or else Basic, is displayed on the left side of the title bar.

Basic	Selects the Basic properties for editing. These are the properties first applied to all elements. Elements that belong to a group will take the properties unique to the group as well. The Basic properties are the only properties that the d-block, solid (not Hg), natural (not Tc or 104 - 109) elements have.
Reset All Groups	Group properties consist of unique properties and blank properties. Blanks do not replace Basic properties; unique group properties do. Selecting this option changes all properties to blanks. A warning message appears asking for conformation that you really want to reset all fonts and colors.
Reset Edited Group	Changes all properties in edited group to blanks. This option is only enabled if a group is being edited

Reset Selected Field in Edited Group   This caption appears when editing a group.

Reset Selected Field in All Groups   This caption appears when editing Basic properties.

Group properties can be broken down into the box fill color and the properties of each field.   There are four fields in a box: atomic number, symbol, name, and atomic mass.   These selections allow all the properties of a field to be set to blanks, either in the edited group,

or in all groups.   The field properties are font name, font color, and bold and italic attributes.

Occasionally, it may be helpful to understand more details of how blanks are assigned.   After clicking the OK button on a font or color dialog box, the program compares your responses to the Basic properties. Properties that are the same are set to blanks. Suppose that the p-block has a different box fill color than the Basic properties, and that you want gallium, a p-block, liquid element, to have the same box fill color as the Basic properties.   To accomplish this, first change the basic box fill color, then change the liquid box fill to the color you want, and then change the basic color back to the same as the liquid color.   All this work will be undone if you open the liquid box fill color dialog box and select OK, which would change the color back to a blank.

s-block
p-block
f-block
Short Half-life
Metalloid
Non-Metals
Gases
Liquids

These are the possible groups of elements that can have unique properties.   (d-Block, long half-life, metallic solids have Basic properties.)   When one of these groups is selected, only controls that affect the group are displayed.   The Font buttons are used to change the name, color, and bold and italic attributes, but the font size cannot be changed in a group, even though it is displayed in the font dialog box.   (Select Basic to change the font size.)

When a group or Basic is selected, a typical element from the group will be displayed.   Selecting the group again will display a second typical element in the group, if there is a second one (same as selecting "Typical Element Shown" from the "Options" menu).

The groups are listed in the order in which their properties are applied, which is: Basic properties, then s-, p-, or f-block properties, then short half-life properties, then metalloid or non-metal properties, then gas or liquid properties

```
√ Basic

  Reset All Groups
  Reset Edited Group
  Reset Selected Field in All Groups    ▶

  s-Block
  p-Block
  f-Block

  Short Half-life

  Metalloid
  Non-Metals

  Gases
  Liquids

  Active Groups          √ s-, p-, and f-Blocks
                         √ Short Half-life
                         √ Metalloids & Non-metals
                         √ Gases & Liquids
```

Active Groups   After setting the properties of the metalloid elements, you may decide that, since the periodic table will go in an introductory class, you would rather just use the diagonal line to separate metallic and non-metallic elements.   Rather than resetting the groups, you can select the "Metalloids & Non-Metals" groups with this menu item to make them inactive.   If you wanted to make a chart for an advanced class, you could click "Metalloids & Non-Metals" again to make the groups active.   *Note:*   Editing a group automatically makes it active.

Preview Menu

| File | Options | Group To Edit | Preview | Print... | Help |

Shrink Table To Fit Screen F8
√ **Show Page Boundaries**
State of the Art

Shrink Table To Fit Screen This displays the entire table with all of your options. The table is scaled down to fit on the screen.   If smaller than the screen, the table is displayed actual size; it is never expanded to fit the screen.   Press any key or mouse button to return to the single-element display.   No changes can be made from this screen. The size of the printed table is shown in the lower left corner.   If page boundaries are shown, then the size is a sum of printed areas on pages.   That is, if two 8½" X 11" pages, and each page has a ¼" border, then the size will be 10½" X 16", even if the table only prints on part of the second page.

Show Page Boundaries   This option may be checked or unchecked.   When checked, page boundaries are added to the full-screen display of the table.

Preview with page boundaries:

Periodic Table of the Elements

1 1A												13 3B	14 4B	15 5B	16 6B	17 7B	18 8B
1 H	2 2A																2 He
3 Li	4 Be											5 B	6 C	7 N	8 O	9 F	10 Ne
11 Na	12 Mg	3 3A	4 4A	5 5A	6 6A	7 7A	8	9 8A	10	11 1B	12 2B	13 Al	14 Si	15 P	16 S	17 Cl	18 Ar
19 K	20 Ca	21 Sc	22 Ti	23 V	24 Cr	25 Mn	26 Fe	27 Co	28 Ni	29 Cu	30 Zn	31 Ga	32 Ge	33 As	34 Se	35 Br	36 Kr
37 Rb	38 Sr	39 Y	40 Zr	41 Nb	42 Mo	43 Tc	44 Ru	45 Rh	46 Pd	47 Ag	48 Cd	49 In	50 Sn	51 Sb	52 Te	53 I	54 Xe
55 Cs	56 Ba	57 La	72 Hf	73 Ta	74 W	75 Re	76 Os	77 Ir	78 Pt	79 Au	80 Hg	81 Tl	82 Pb	83 Bi	84 Po	85 At	86 Rn
87 Fr	88 Ra	89 Ac	104 Unq	105 Unp	106 Unh	107 Uns	108 Uno	109 Une									

58 Ce	59 Pr	60 Nd	61 Pm	62 Sm	63 Eu	64 Gd	65 Tb	66 Dy	67 Ho	68 Er	69 Tm	70 Yb	71 Lu
90 Th	91 Pa	92 U	93 Np	94 Pu	95 Am	96 Cm	97 Bk	98 Cf	99 Es	100 Fm	101 Md	102 No	103 Lr

Preview without page boundaries.   This was printed out on 78 sheets of 8½" X 11" paper for a classroom.

Periodic Table of the Elements

1																		18
1 **H** 1.00794	2												13	14	15	16	17	2 **He** 4.00260
3 **Li** 6.941	4 **Be** 9.01218												5 **B** 10.811	6 **C** 12.011	7 **N** 14.0067	8 **O** 15.9994	9 **F** 18.9984	10 **Ne** 20.1797
11 **Na** 22.9898	12 **Mg** 24.305	3	4	5	6	7	8	9	10	11	12		13 **Al** 26.9815	14 **Si** 28.0855	15 **P** 30.9738	16 **S** 32.066	17 **Cl** 35.4527	18 **Ar** 39.948
19 **K** 39.0983	20 **Ca** 40.078	21 **Sc** 44.9559	22 **Ti** 47.88	23 **V** 50.9415	24 **Cr** 51.9961	25 **Mn** 54.9381	26 **Fe** 55.847	27 **Co** 58.9332	28 **Ni** 58.69	29 **Cu** 63.546	30 **Zn** 65.39		31 **Ga** 69.723	32 **Ge** 72.61	33 **As** 74.9216	34 **Se** 78.96	35 **Br** 79.904	36 **Kr** 83.8
37 **Rb** 85.4678	38 **Sr** 87.62	39 **Y** 88.9059	40 **Zr** 91.224	41 **Nb** 92.9064	42 **Mo** 95.94	43 **Tc** 98.11	44 **Ru** 101.07	45 **Rh** 102.906	46 **Pd** 106.42	47 **Ag** 107.868	48 **Cd** 112.411		49 **In** 114.82	50 **Sn** 118.71	51 **Sb** 121.75	52 **Te** 127.6	53 **I** 126.904	54 **Xe** 131.29
55 **Cs** 132.905	56 **Ba** 137.327	57 **La** 138.906	72 **Hf** 178.49	73 **Ta** 180.948	74 **W** 183.85	75 **Re** 186.207	76 **Os** 190.2	77 **Ir** 192.22	78 **Pt** 195.08	79 **Au** 196.967	80 **Hg** 200.59		81 **Tl** 204.383	82 **Pb** 207.2	83 **Bi** 208.980	84 **Po** (209)	85 **At** (210)	86 **Rn** (222)
87 **Fr** (223)	88 **Ra** 226.025	89 **Ac** 227.028	104 ***Unq*** (261)	105 ***Unp*** (262)	106 ***Unh*** (263)	107 ***Uns*** (262)	108 ***Uno*** (265)	109 ***Une*** (266)										

58 **Ce** 140.115	59 **Pr** 140.908	60 **Nd** 144.24	61 ***Pm*** (145)	62 **Sm** 150.36	63 **Eu** 151.965	64 **Gd** 157.25	65 **Tb** 158.925	66 **Dy** 162.5	67 **Ho** 164.930	68 **Er** 167.26	69 **Tm** 168.934	70 **Yb** 173.04	71 **Lu** 174.967
90 **Th** 232.038	91 **Pa** 231.036	92 **U** 238.029	93 ***Np*** 237.048	94 ***Pu*** (244)	95 ***Am*** (243)	96 ***Cm*** (247)	97 ***Bk*** (247)	98 ***Cf*** (251)	99 ***Es*** (252)	100 ***Fm*** (257)	101 ***Md*** (258)	102 ***No*** (259)	103 ***Lr*** (260)

60.73 X 94.46
inches

State of the Art   This displays a window showing the state of your work. It lists font and color settings for the title, headings (if active), Basic properties, and properties of active groups.   Properties that are set at blank are left blank. It is prudent to check the properties in this window before printing out a table.   *Note:*   The "State of the Art" window will remain on top of other windows.   By reducing the size of this window, you can see what properties you want to change while working in the main window.

Printing Menu

Laser printer users: You must turn on the "Print Truetype as Graphics" option.   Select Printer Setup, and press the Options button to do this**.   If letters are missing from your printout, it is probably because this option is not on.**

Large paper, such as legal paper will reduce the amount of cutting and pasting.   The order of printing pages is down, then across.   For example, the first column might contain pages 1 - 3, the second pages 4 - 6, and so on.   This order will save some cutting of margins when printing with the continuous form type of paper.   Dot matrix printers give a very nice printout on fan feed paper.   If your dot matrix printer has a top or bottom non-printing area, try getting an updated printer driver from ftp.microsoft.com.

On multipage printouts, you are asked which pages to print.   If page 43 of a large printout is messed up, just that one page can be easily printed.   When printing is selected, a cancels screen appears.   Pressing the cancel button cancels the printing. (Just one click on the button will do the job, although it takes several seconds for the click to register.)   *Note:*   The pages-to-print dialog box includes a Setup button that displays a printer setup dialog box.   Don't use it.   Use the menu item Printer Setup to change the printer properties before printing.

The program supports printing colors on a color printer.

Print Displayed Element	This prints the displayed element in a box. The maximum size of a box plus period number plus column number is a square 22.75 inches, or 57.79 cm, on outside sides. (That is also the largest size of paper this program can print to, though few printers accept such large paper.) Such a large box would take several sheets of paper on most printers. Makes a nice poster to hang on a door, especially if you have access to a color printer.
Print Table	This prints the entire periodic table. The size of each element's box is limited, as with a single element, to 22 inches, or 56 cm. This makes a huge table possible. *Suggestion:* A reasonably sized table for a classroom will require printing 40 - 80 sheets of paper. Before making that commitment, check the table.
Printer Setup	From this menu item you can change the default printer and printer properties, such as paper size, orientation, resolution. *Note:* When Print Displayed Element or Print Table are selected, a print dialog box appears if the printout may take more than one page.

That dialog box contains a Setup button that should not be used.   Changing the default printer with that button will not work.

Print Page Immediately   If unchecked, all pages in a print job are prepared before being sent to the printer.   If checked, each page is printed as soon as it is ready (immediately).   If printing to file with this option checked, you will be asked for a filename for each page.

The largest table PerTable can create would require about 1000 sheets of 8½" X 11" paper.   The first 30 pages of a table printed to file for a 300 dot per inch laser printer requires about 20 megabytes of memory. If you print with Windows Print Manager, pages would usually be first written to disk.   Then, when the program was done, Print Manager would send the data to the printer.   You can see that you could easily run out of disk space.   To make it possible to print many pages over your lunch break, select Print Pages Immediately.   Then each page will be printed as soon as its creation is complete.   This reduces the chance of running out of free disk space.

Before using this option, check the following settings:
      In Window's Control Panel, activate the Printers icon.   At the bottom of the displayed screen, the option Use Print Manager must be selected.
      Now click the Connect button.   That displays another form, at the bottom of which the option Fast Printing Direct to Port must NOT be selected.
      Now close the Control Panel and open Print Manager.   Under Options set High Priority.   You can close Print Manager.

If you use the HP 500C Deskjet printer, you can get an updated Windows printer driver file from cica.indiana.edu/WIN3/Drivers.   This replaces Windows Print Manager.   The PerTable "Print Page Immediately" option requires that the HP Print Manager selection, "Send Documents Directly to Network" (in Options/Background Printing) NOT be checked.   The Printer Priority must be set at High.

Exit Program After Print   When a printing job completes without being canceled, this option will end the program.   If you are printing on someone else's computer, and the owner will be back before you are, this saves having to leave a message explaining what is on the screen and how to get rid of it.

Checklist for Table Printing

Review the settings of all options in the Options menu and on the screen.

> Which style of traditional heading will you use?
> How do you prefer to define the lanthanides and actinides?
> Is the diagonal line roughly three times the width of the regular line?
> Print out the single element Al.   Is the diagonal line grossly large or barely visible?
> Print out the single element Rn.   Do you want to increase Extra Space so that the parentheses are farther from the border?
> Set the title font properties; uncheck the Title Same Size as Symbol box.

Check font parameters and group settings on the State of the Art form.

Look at the table on the preview screen.   Are the active groups clearly showing up?

Print a small table out before printing the large one (reduce all font sizes and line widths by, say, 10).

Use a printer that positions each sheet of paper in the same place.   For a laser printer, use a paper tray that firmly holds the paper sides along the entire length of the paper.   The convenient fold-down trays don't provide reproducible positioning, which make it harder to trim off the non-printing area.

After you print, position paper in a paper cutter with a paper guide.   An unabridged dictionary on a ruler will work.

The Data File

The data file, PERTABLE.DAT, must be in the same directory as PERTABLE.EXE. PERTABLE.DAT contains the symbol, name, and atomic mass of all the elements. Should the precision with which atomic masses are known increase, you can update the file.   If you spell funny (S = sulphur instead of sulfur), change the file.   I have used IUPAC names for elements beyond 104. Since IUPAC will not name them until an independent lab confirms their existence, elements with three-letter symbols may be thought of as "rumored" elements.   However, below are names approved by the American Chemical Society.   These lines can be copied to the clipboard and then inserted in the PERTABLE.DAT file using Notepad.   Remove the lines they replace.   Note that there are no spaces in these lines.

    104,Rf,rutherfordium,(261)
    105,Ha,hahnium,(262)
    106,Sg,seaborgium,(263)
    107,Ns,nielsbohrium,(262)
    108,Hs,hassium,(265)
    109,Mt,meitnerium,(266)

Controls on the Screen

Font Buttons

Selecting a font button displays a dialog box that allows the font name, size, color, and bold and italic properties to be changed. Although   underline and strikeout properties appear in all the font dialog box, selecting them has no effect.   Look at the right side of the title bar to check what the font applies to: Atomic Number, , Symbol, Name, Atomic Mass, Heading 1 -18, Old-Style Heading, or Table Caption.   The font size must be an integer (9.75 causes an error message). Large font sizes can be entered.   The largest sizes that can be entered are:

Heading	600
Atomic Number	825
Symbol	825
Name	225
Atomic Mass	<496
Title	600

The largest size allowed for the atomic mass depends on how many significant figures are selected for atomic mass.   If in doubt, simply enter a huge font size, such as 1000.   A message will appear telling the valid size range.

Both Word for Windows 6.0 and Word Perfect for Windows 6.0 come with many new true type fonts that all applications can use.   For example, Word includes Colonna MT, which is an $OUTLINE\ FONT$, such as is customarily used for the short half-life elements. The font size needs to be large for the outline quality to clearly show on screen.   Word Perfect has CaslonOpnface BC, which looks similar.

Colors print as shades of gray on non-color printers; for such printers it may be simpler to just select silver, gray, or black from the colors list.   For small font sizes the gray shades may not work.

Column Headings
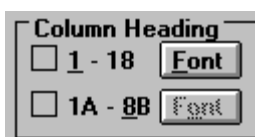
Column headings, if selected, appear over the top element in a column.   Click the 1 - 18 box to use the IUPAC-approved   1 to 18 column headings.   Click the other box to use the older style heading.   One of four old style headings can be selected from the menu under options.   The caption indicates which style is in use; in the illustration, 1A - 8B is the style used.   Both 1 - 18 and an old style heading may be used at the same time.   The 1 - 18 heading will be above the other heading.

The 1 - 18 font properties are also applied to the period numbers.   The font buttons are normally not active

unless the associated column heading is active. However, if the period number option is checked in the options menu, then the 1 - 18 font button will always be active.

**Atomic Number Font**
Atomic Symbol Font   These bring up the font dialog box for atomic number and atomic symbol.   *Note:*   When the program determines the width of a box, it does not check the width of the atomic number string of numbers.   If you have a small box and make the atomic number font size large, it may not all show.   You will have to increase the symbol, name, or atomic mass font size to make the box wider.
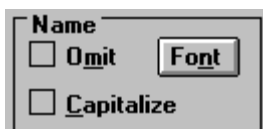
Name   A common chemistry test question: "What is the name of the element represented by Na?"   For such a class room, a periodic table without names may be desired. Click omit to omit it.   Element names are not capitalized in sentences, but some charts do capitalize them.   (I think it is easier to use them right in sentences if they are not capitalized.)   Click capitalize to capitalize the first letter of the names.   The font button brings up the font dialog box for the names.
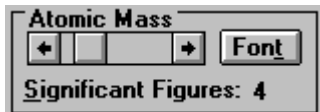
Atomic Mass   The scroll bar allows you to select how many significant figures to display for atomic mass.   For example, to 3 significant figures, the atomic mass of H is 1.01. Significant figures range from 3 to the most in the PERTABLE.DAT file, which is presently 9.   The font button brings up the font dialog box for atomic mass.

Line and Box Controls   The Line Width scroll bar allows you to select a line width.   The units are in pixels, so the best line width to use will vary depending on the monitor you use.   When printed, the box will have the same relative line width as when displayed.   A line width of blank space separates the line from the longest string of characters in the box.   This extra space is only added to the left and right sides of the box, not to the top or bottom.

The Line Color button displays a font dialog box, but only the color selection has any effect.   This determines the color of the line.   Only solid (not dithered) colors are available.

The Box Color button displays a color dialog box. This is for setting the box fill color.   Don't be afraid to use this with a black and white printer.   The color dialog box included many shades of gray, and even colors will print as some shade of gray on a non-color printer.

Besides the solid colors that are available for fonts and the line color, the box color dialog also contains many dithered color combinations. Dithering is the process of composing one color from other colors that are placed side-by-side. If you want to get fancy, select "Define Custom Colors..." in the color dialog box. Then you can define a custom color by clicking on a color palette, or by entering hue, saturation, and luminosity values, or by entering red, green, and blue values.

The Extra Space scroll bar adds extra space between the line and the text in the box. The selected number of pixels is added to all four sides of the box.

The Diagonal Line Width scroll bar and Diagonal Color button are only visible if Diagonal Line is checked in the options menu. Press F5 ("Select Typical Element") while editing the Basic properties to see boron and aluminum, both of which contain the diagonal line separating metals from non-metals. The Diagonal Line Width scroll bar controls the width of the line. The Diagonal Color button is used to set the color of the diagonal line. This button brings up a font dialog box in which only the color selection has an effect.

Title
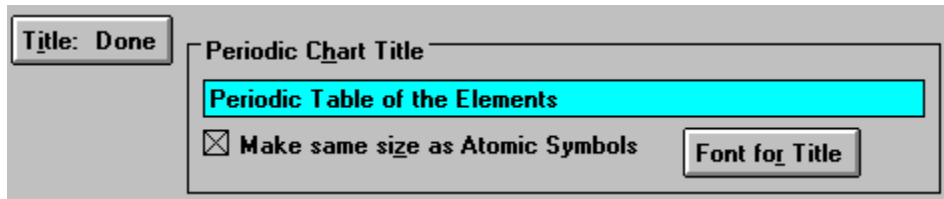
When the title button is pressed, the displayed box disappears and the Periodic Chart Title frame appears. You can directly enter the text that will appear at the top of the table. You can also use SHIFT+INSERT to insert text from the clipboard. For example, you could copy special characters in the Windows Character Map to the clipboard, then paste them into the title. The maximum number of characters is 60. You will receive an error message if you try the table with a caption that is too wide to fit between H and He. *Note:* When the "Title" button is pressed, its caption changes to "Title: Done". Press the "Title: Done" button to have the box redisplayed.

The Font for Title button selects the font properties of the title.

The font size of the title is one of the last things to worry about. While designing your table, you can give the title the same font size as the atomic symbols.

When you print the table, you are warned if "Make same size as Atomic Symbols" is active, and given a chance to change it before printing.

Exit   The exit button ends the program.   You are not prompted to save your table.

Element Box Display

When the mouse pointer is over the box and associated headings, it turns into cross hairs.   When the pointer has the cross hair shape, you can double-click the mouse button to bring up an appropriate font dialog box.   What the font properties will apply to depends on where the mouse is located when it is double-clicked.   The figure shows what is associated with each region.
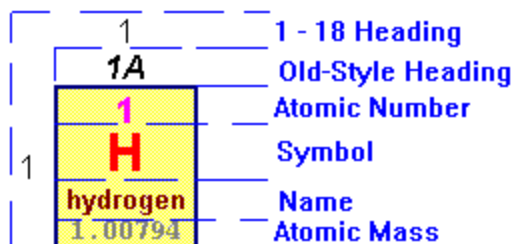
When the box becomes too large to all fit on the screen, scroll bars appear.   Dashed lines appear on large boxes to indicate page breaks. The PAGE UP and PAGE DOWN Keys will move the box up and down the height of the display (unless the active control on the screen is a scroll bar).   Likewise, CTRL+PAGE UP and CTRL+PAGE DOWN move the box left and right the width of the display.

The size of the box is displayed at the bottom of the screen, next to the Exit button.   The measurement is from line-center to line-center, so the actual box will be a little wider. The units are either inches or centimeters, depending on Windows' control panel settings.

The largest boxes take several minutes to display on a 386, 16 Mhz computer with 4 Megs of memory and no other applications running.   If Word for Windows, or Excel is also running, the program runs out of memory.   A message will appear suggesting that you close other applications and try again, starting with a smaller box.   If the smaller box works, and you have closed other applications, the large box may be tried again.