


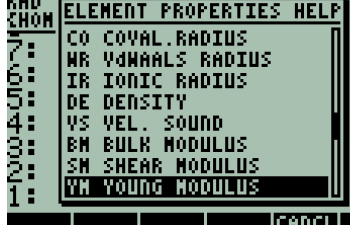




PTE

ptbl: periodic table of elements page1,2	<pre> 1 2 3 4 5 6 7 8 9 1 H 2 Li Be 3 Na Mg 4 K Ca Sc Ti V Cr Mn Fe Co 5 Rb Sr Y Zr Nb Mo Tc Ru Rh 6 Cs Ba + Hf Ta W Re Os Ir 7 Fr Ra + Rf Db Sg Bh Hs Mt Lan + La Ce Pr Nd Pm Sm Eu Act + Ac Th Pa U Np Pu Am </pre>	<pre> 10 11 12 13 14 15 16 17 18 1 He 1 2 He 2 3 He 3 4 He 4 5 He 5 6 He 6 7 He 7 B C N O F Ne Al Si P S Cl Ar Ni Cu Zn Ga Ge As Se Br Kr Pd Ag Cd In Sn Sb Te I Xe Pt Au Hg Tl Pb Bi Po At Rn Ds Rg Ch Nh Fl Mc Lu Ts Og Gd Tb Dy Ho Er Tm Yb Lu Ch Bk Cf Es Fm Md No Lr </pre>
Elview: view element data	<pre> SYMBOL:O NAME:Oxygen GROUP,PERIOD,BLOCK:16,2,p AT.WEIGHT:15.9994 AT.NUMBER:8 ELEC.CONF.:He 2s2 2p4 ELEC.SHELL:2,6 GROUND STATE:3p2 OXID.STATES:-2..2 CRYSTAL STRUCT.:cub PHASE COL:gas,class EL.MAGN:-,param EL.ORIGIN:hs </pre>	<pre> ISO.STABLALL:16-12112-28 CRUST ABUND.:.46 UNIV ABUND.:.01 ELECTRO NEG.:3.44 ELEC.AFFIN.:141.kJ/mol' EL.CONDUCT.:? MAGN.SUSC.:.00000190772 REFR.INDEX:1.000271 IONIS.ENERGY:1313.9.kJ/mol' MOLAR VOLUME:11200.cm^3/mol' ATOMIC RADIUS:60.ph' COVAL RADIUS:66.ph' VDWAALS RADIUS:152.ph' </pre>
view element data	<pre> IONIC RADIUS:22.ph' DENSITY:1.429.kg/m^3' VELSOUND:317.5.m/s' BULK MODULUS:?' SHEAR MODULUS:?' YOUNG MODULUS:?' POISSON RATIO:?' MOHS HARD.:?' BRIN.HARD.:?' VICK.HARD.:?' MELT.POINT:-218.3.C' BOIL.POINT:-182.9.C' HEAT FUSION:.222.kJ/mol' </pre>	<pre> HEAT VAPOR.:3.41.kJ/mol' HEAT ATOM.:243.kJ/mol' SPEC.HEAT:919.J/(kg.K)' THERM.CONDUCT.:.02652.W/(m.K)' THERM.EXPANS.:?' CRIT.PRESS.:5.043.MPa' CRIT.TEMP.:154.59.K' SUPCOND.TEMP.:? CURIE TEMP.:? </pre>
Elview: view element data	<pre> SYMBOL:C NAME:Carbon GROUP,PERIOD,BLOCK:14,2,p AT.WEIGHT:12.0107 AT.NUMBER:6 ELEC.CONF.:He 2s2 2p2 ELEC.SHELL:2,4 GROUND STATE:3p0 OXID.STATES:-4..4 CRYSTAL STRUCT.:dnd PHASE COL:sol,black EL.MAGN:cond,diam EL.ORIGIN:ls25.hs25 </pre>	<pre> ISO.STABLALL:12,1212-22 CRUST ABUND.:.0012 UNIV ABUND.:.005 ELECTRO NEG.:2.55 ELEC.AFFIN.:153.9.kJ/mol' EL.CONDUCT.:100000.1/(m.K)' MAGN.SUSC.:-.000014 REFR.INDEX:2.417 IONIS.ENERGY:1086.5.kJ/mol' MOLAR VOLUME:5.314.cm^3/mol' ATOMIC RADIUS:70.ph' COVAL RADIUS:76.ph' VDWAALS RADIUS:170.ph' </pre>
page 2		
page 3	<pre> IONIC RADIUS:29.ph' DENSITY:2260.kg/m^3' VELSOUND:18350.m/s' BULK MODULUS:33.GPa' SHEAR MODULUS:?' YOUNG MODULUS:?' POISSON RATIO:?' MOHS HARD.:5 BRIN.HARD.:?' VICK.HARD.:?' MELT.POINT:3550.C' BOIL.POINT:4027.C' HEAT FUSION:105.kJ/mol' </pre>	<pre> HEAT VAPOR.:715.kJ/mol' HEAT ATOM.:717.kJ/mol' SPEC.HEAT:710.J/(kg.K)' THERM.CONDUCT.:140.W/(m.K)' THERM.EXPANS.:.0000071.1/K' CRIT.PRESS.:? CRIT.TEMP.:? SUPCOND.TEMP.:? CURIE TEMP.:? </pre>
page 4		
Elprop: AR atomic radius of Li, melting-, boiling-point of Fe (1.5s)	<pre> 9: 8: 7: 6: 'Li' 5: 'AR' 4: AR(Li):(167.ph) 3: 'Fe' 2: (MP BP) 1: (MP(Fe):(1538.C) BP) </pre>	<pre> 1: { IR(Li):(60.ph) IR(Be):(44.ph) IR(B):(35.ph) IR(C):(29.ph) IR(N):(25.ph) IR(O):(22.ph) IR(F):(19.ph) IR(he):(112.ph) } </pre>
Elprop: IR ionic radii of second period	<pre> ptl pts pta Elda3 Elwa3 Elpro </pre>	<pre> ptl pts pta Elda3 Elwa3 Elpro </pre>
Molwt: molweight	<pre> 7: 6: 5: 4: 'H2SO4' 3: M(H2SO4):(98.07248.Hol) 2: "Mg(OH)2" 1: M(Mg(OH)2):(58.31962.Hol) </pre>	<pre> 49 In W Z(W):74 Tungs W Pd Palladium </pre>
ZxEl, NxEl: atomic number, string to symbol	<pre> Molwt ZxEl NxEl #Grou #Perd PPropx </pre>	<pre> Molwt ZxEl NxEl #Grou #Perd PPropx </pre>
→Group, →Period: elements of 18 group, 4 period, Lanthanides	<pre> 9: 8: 7: 6: 18 5: (He Ne Ar Kr Xe Rn) 4: 4 3: (K Ca Sc Ti V Cr Mn Fe) 2: 'LAN' 1: (La Ce Pr Nd Pm Sm Eu) </pre>	<pre> 4: { AR(Co):(152.ph) AR(Rh):(173.ph) AR(Ir):(180.ph) AR(Mt):? 1: { AR(Co):(152.ph) AR(Rh):(173.ph) AR(Ir):(180.ph) } </pre>
Drop?: omit elements with unknown properties	<pre> Molwt Atno ZxEl N+El #Grou #Perd </pre>	<pre> Prbar PrLin PrScd Drop2 Elnan PRLIS </pre>

→Group, →Period: elements of 18 group, 4 period, Lanthanides	<pre> 9: 8: 7: 6: 5: 18 4: (He Ne Ar Kr Xe Rn) 3: (K Ca Sc Ti V Cr Mn Fe) 2: 'LAN' 1: (La Ce Pr Nd Pm Sm Eu) </pre>	<pre> 4: 3: 2: 1: </pre>
Drop?: omit elements with unknown properties	<pre> 9: 8: 7: 6: 5: 18 4: (He Ne Ar Kr Xe Rn) 3: (K Ca Sc Ti V Cr Mn Fe) 2: 'LAN' 1: (La Ce Pr Nd Pm Sm Eu) </pre>	<pre> 4: 3: 2: 1: </pre>
Elnames MP Sort as(des)-cending, drop ?	<pre> 9: 8: 7: 6: 5: 18 4: (He Ne Ar Kr Xe Rn) 3: (K Ca Sc Ti V Cr Mn Fe) 2: 'LAN' 1: (La Ce Pr Nd Pm Sm Eu) </pre>	<pre> 4: 3: 2: 1: </pre>
Elchoose: choose elements with certain properties	<pre> 9: 8: 7: 6: 5: 18 4: (He Ne Ar Kr Xe Rn) 3: (K Ca Sc Ti V Cr Mn Fe) 2: 'LAN' 1: (La Ce Pr Nd Pm Sm Eu) </pre>	<pre> 4: 3: 2: 1: </pre>
Prbarplot: barplot of atomic radii of 6. period	<pre> 9: 8: 7: 6: 5: 18 4: (He Ne Ar Kr Xe Rn) 3: (K Ca Sc Ti V Cr Mn Fe) 2: 'LAN' 1: (La Ce Pr Nd Pm Sm Eu) </pre>	<pre> 4: 3: 2: 1: </pre>
Prlineplot: lineplot of electro negativity of 4. period	<pre> 9: 8: 7: 6: 5: 18 4: (He Ne Ar Kr Xe Rn) 3: (K Ca Sc Ti V Cr Mn Fe) 2: 'LAN' 1: (La Ce Pr Nd Pm Sm Eu) </pre>	<pre> 4: 3: 2: 1: </pre>
Prscatplot: scatterplot of melting points of all elements	<pre> 9: 8: 7: 6: 5: 18 4: (He Ne Ar Kr Xe Rn) 3: (K Ca Sc Ti V Cr Mn Fe) 2: 'LAN' 1: (La Ce Pr Nd Pm Sm Eu) </pre>	<pre> 4: 3: 2: 1: </pre>
El→EC: electron configuration classic and with shells	<pre> 9: 8: 7: 6: 5: 18 4: (He Ne Ar Kr Xe Rn) 3: (K Ca Sc Ti V Cr Mn Fe) 2: 'LAN' 1: (La Ce Pr Nd Pm Sm Eu) </pre>	<pre> 4: 3: 2: 1: </pre>
Group names	<pre> 9: 8: 7: 6: 5: 18 4: (He Ne Ar Kr Xe Rn) 3: (K Ca Sc Ti V Cr Mn Fe) 2: 'LAN' 1: (La Ce Pr Nd Pm Sm Eu) </pre>	<pre> 4: 3: 2: 1: </pre>
PrHelp: help to all properties OK shows info, copy to stack	<pre> 9: 8: 7: 6: 5: 18 4: (He Ne Ar Kr Xe Rn) 3: (K Ca Sc Ti V Cr Mn Fe) 2: 'LAN' 1: (La Ce Pr Nd Pm Sm Eu) </pre>	<pre> 4: 3: 2: 1: </pre>
PrHelp: help to all properties OK shows info, copy to stack	<pre> 9: 8: 7: 6: 5: 18 4: (He Ne Ar Kr Xe Rn) 3: (K Ca Sc Ti V Cr Mn Fe) 2: 'LAN' 1: (La Ce Pr Nd Pm Sm Eu) </pre>	<pre> 4: 3: 2: 1: </pre>

<p>Eledit: edit element data</p> <p>kJmeV: kJ/mol to eV</p>	<pre> * :SYMBOL: O :NAME: "Oxygen" :GROUP,PERIOD: "16,2" :AT.WEIGHT: 15.9994 :AT.NUMBER: 8 :EL.CON.: "(He)(2s^2)(2p^4)" :EL.SHELL: "2,6" :GROUND STATE: "3P2" +SKIP+SKIP+ +DEL DEL+ DEL L INS = </pre>	<pre> 8: 7: 6: 5: 4: 3: 2: IE(Be): { 899.50-$\frac{\text{kJ}}{\text{mol}}$ 1757.10-$\frac{\text{kJ}}{\text{mol}}$ 1: IE(Be): { 9.32-eV 18.21-eV 153.1- ULIST View Help PTE Help PTE Help PTE Help PTE </pre>
<p>PRLIST: list with >50 element properties page 1</p> <p>page 2</p>	<pre> 4 < SV "SYMBOL" > < NA "NAME" > < GP "GROUP,PERIOD,BLOCK" > < AW "AT.WEIGHT" > < AN "AT.NUMBER" > < EC "ELEC.CONF." > < ES "ELEC.SHELL" > < OS "GROUND STATE" > < OS "OXID.STATES" > < CS "CRYSTAL STRUCT." > < PC "PHASE COL." > < EM "EL.MAGN" > < EO "EL.ORIGIN" > < IS "ISO.STABLALL" > < CA "CRUST ABUND." > < UA +SKIP+SKIP+ +DEL DEL+ DEL L INS = </pre>	<pre> "CRUST ABUND." > < UA "UNIV ABUND." > < UA "ELECTRO NEG." > < EA "ELEC.AFFIN." > < EL "EL.CONDUCT." > < MS "MAGN.SUSC." > < RF "REFR.INDEX" > < IE "IONIS.ENERGY" > < MV "MOULAR VOLUME" > < AR "ATOMIC RADIUS" > < CO "COVAL.RADIUS" > < MR "VDMARLS RADIUS" > < IR "IONIC RADIUS" > < DE "DENSITY" +SKIP+SKIP+ +DEL DEL+ DEL L INS = </pre>
	<pre> < IONIC RADIUS" > < DE "DENSITY" > < VS "VELSOUND" > < BM "BULK MODULUS" > < SM "HEAR MODULUS" > < YM "YOUNG MODULUS" > < PR "POISSON RATIO" > < MH "MOHS HARD." > < BH "BRIN.HARD." > < VH "VICK.HARD." > < MP "MELT.POINT" > < BP "BOIL.POINT" > < HF "HEAT FUSION" > < HV "HEAT VAPOR." > < HA "HEAT ATOM." > < SH "SPEC.HEAT" +SKIP+SKIP+ +DEL DEL+ DEL L INS = </pre>	<pre> "MOHS HARD." > < BH "BRIN.HARD." > < VH "VICK.HARD." > < MP "MELT.POINT" > < BP "BOIL.POINT" > < HF "HEAT FUSION" > < HV "HEAT VAPOR." > < HA "HEAT ATOM." > < SH "SPEC.HEAT" > < TC "THERM.CONDUCT." > < TE "THRM.EXPANS." > < CP "CRIT.PRESS." > < CT "CRIT.TEMP." > < SC "SUPCOND.TEMP." > < CU "CURIE TEMP." > > +SKIP+SKIP+ +DEL DEL+ DEL L INS = </pre>
<p>HelpPTE: help</p>	<pre> PTE: PERIODIC TABLE OF ELEMENTS E = ELEMENT SYMBOL H,O,Si,Al Lele LIST ELEMENT DATA IN PORT 2 [+], [+], [+], [+], INRT] = PREV,NEXT,FIRST,LAST,NEXT PAGE QUIT VIEW WITH ENTER] ptbl = + PERIODIC TABLE PICTURE Elview E + " " PICTURE WITH DATA CAN BE TRANSFERRED TO PC Elprop E,CE1, > PR,CPRI, > PR(E), (CPR(CE1), > PR=PROPERTY GET ELEMENT PROPERTIES </pre>	<pre> +group n + < > n. GROUP (1&n&20) 19 = LAN, 20 = ACT +period n + < > n. PERIOD (1&n&7) Elnames = + < > LIST OF ELEMENT SYMBOLS WITH INCREASING Z Prpex = + CE1, > PR EXAMPLE FOR bar,line,scat plot Prbarplot CE1, > PR + BARPLOT Prlineplot CE1, > PR + LINEPLOT Prscatplot CE1, > PR + SCATPLOT PLOT PROPERTY OF ELEMENTS ACCORDING ATOMIC NUMBER. PR + 0 IF PR=" ", '?' </pre>
<p>HelpPTE: help</p>	<pre> Prchoose = + PR CHOOSE PROPERTY Elchoose prop + < > ELEM WITH PROP CRY STR. PHCOL EL.MAG EO: hex,lig,salu,semi,diam,ns Sort+ < > + < > SORT Elprop LIST +ASCEND, +DESCEND, + Drop? Drop? < > + < > DROP OBJECTS WITH ? = UNKNOWN VALUES "-" = NOT EXISTENT. Molwt "H2O", "H2CO3" + M MOLECULAR WEIGHT ZxEl Z < > E ATOMIC NUMBER TO ELEMENT SYMBOL </pre>	<pre> NXL N < > E ELEMENT NAME OR SUBSTRING TO EL. SYMBOL El+EC E + EC(E): " " EC(E): < > ELEC.CONF. + LIST ELECTRON NUMBERS SUBSHELLS s,p,d,f kJmeV x.kJ/mol < > y.eV CONVERT View 0 + PICTURE VIEW STRING Eledit E + < >, EDIT EL.PROPERTIES PRESS CONT AFTER EDIT PrHelp = + HELP TO PROPERTIES GrNames = + GROUP NAMES, BLOCKS PRLIST = + LIST OF EL.PROPERTIES ULIST = + LIST OF PROP. UNITS </pre>
<p>PrHelp: help to properties choose box</p>		
<p>PrHelp: help to properties choose box</p>		
<p>PrHelp: help to properties choose box</p>		

PrHelp: OK gives help	AH AT.WEIGHT atomic mass relative to HCl2/12 GRAPH	ES EL.SHELL electron shell/conf. electron-number in shell R,L.. GRAPH
PrHelp: OK gives help	GS GROUND STATE 2s+1 L J GRAPH	CS CRYST.STRUCT. crystal struct. cub cubic fcc face centered cubic bcc body centered cubic hex hexagonal tet tetragonal mcl monoclinic dia diamond orc orthorhombic rhl rhombohedral scb simple cubic GRAPH
PrHelp: OK gives help	MS MAGN.SUSC. volume magnetic susceptibility, degree of magnetisation in external field X $B=\mu \times H$, $\mu=\mu_0 \times (1+X)$ B=magnetic induction, H=magnetic field, $X_{mass}=X/\rho$ mass susceptibility, $X_{mol}=M \times X_{mass}$ molar susceptibility GRAPH	AR AT.RADIUS 1/pm atomic radius distance nucleus-outest electron GRAPH
PrHelp: OK gives help	SH SHEAR MOD. 1/GPa shear modulus, shear stress/strain G, $G=(F/A)/(\Delta x/I)$, F=force, A=area, Δx =displacement, I=initial length GRAPH	VH VICK.HARD. 1/GPa Vickers hardness, indentation of pyramid $HV=F/A \sim 1.854 \times F/d^2$, F=force, A=area, d=diameter pyramid GRAPH
PrHelp: OK gives help	SH SPEC.HEAT 1/J/(kg*K) specific heat capacity, energy to change temperature of 1kg by 1K, $c=de/dT$, cp,cv at constant pressure, volume GRAPH	TE THERM.EXP. 1/L/K thermal linear expansion α , $\alpha=(\Delta L/L)/\Delta T$ $\Delta L=L_{final}-L_{initial}$, L=initial, ΔT =temperature difference GRAPH