

6  
C  
Carbon

14  
Si  
Silicon

32  
Ge  
Germanium

50  
Sn  
Tin

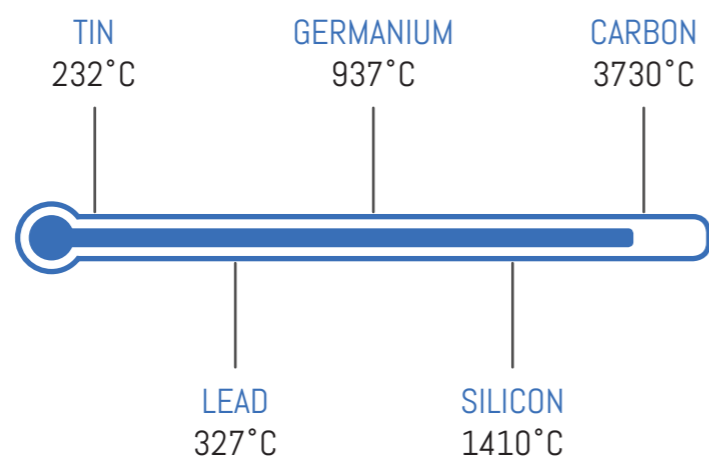
82  
Pb  
Lead

114  
Fl  
Flerovium

# Group 4 - The Crystallogens

THE GROUP 4 ELEMENTS ARE A MIX OF METALS, METALLOIDS & NON-METALS, AND SHOW CONSIDERABLE DIVERSITY IN THEIR PROPERTIES

## MELTING POINTS



SILICON IS THE SECOND MOST ABUNDANT ELEMENT IN THE EARTH'S CRUST AT

**25.7%**

<sup>112</sup>Sn <sup>114</sup>Sn <sup>115</sup>Sn <sup>116</sup>Sn <sup>117</sup>Sn

**10**

<sup>118</sup>Sn <sup>119</sup>Sn <sup>120</sup>Sn <sup>122</sup>Sn <sup>124</sup>Sn

TIN IS THE ELEMENT WITH THE LARGEST NUMBER OF STABLE ISOTOPES

THE GROUP FOUR ELEMENTS FORM HYDRIDES WITH HYDROGEN



TETRAHALIDES WITH HALOGENS

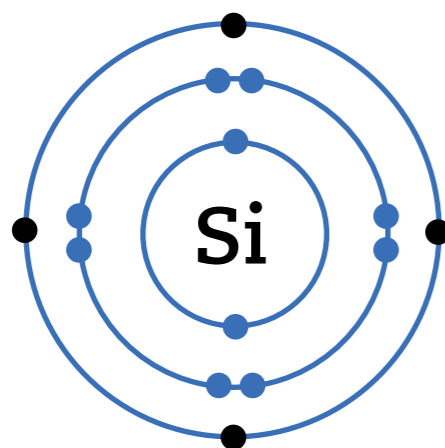


AND A VARIETY OF OXIDES WITH OXYGEN

CARBON MAKES UP **18.5%** OF THE HUMAN BODY



IT ALSO FORMS ORGANIC COMPOUNDS THE STUDY OF WHICH IS KNOWN AS ORGANIC CHEMISTRY



ALL OF THE GROUP 4 ELEMENTS HAVE **FOUR** VALENCE ELECTRONS

EXPOSURE TO LEAD CAN CAUSE **LEAD POISONING**

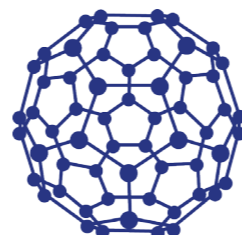


FLEROVIUM IS ONE OF THE MAN-MADE ELEMENTS DISCOVERED IN

**1999**

**8**

THE NUMBER OF ALLOTROPES OF CARBON INCLUDING DIAMOND, GRAPHITE & BUCKMINSTER FULLERINE



## USES OF THE CRYSTALLOGENS



CARBON  
DIAMONDS  
CARBON DATING



SILICON  
GLASS  
ELECTRONICS



GERMANIUM  
MICROSCOPE & CAMERA LENSES



TIN  
TIN CANS



LEAD  
RADIATION SHIELDING  
LEADED PETROL