

PERIODIC TABLE OF THE ELEMENTS

| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|-----------|----|--|--|--|--|--|--|--|--|-----------------------|--|--|--|--|--|--|--|---|--|--|----|-----------|----------|-----------------|----------|------|-----|-----------------|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|---|---|----------|--|----------|--|-----|--|--|--|----|-----|-----------|--------|-----|
| | | | | | | | | | | METALS ← → NON-METALS | | | | | | | | | | <table border="1" style="width: 100px; height: 100px;"> <tr><td style="text-align: center;">1</td><td style="text-align: right;">+</td></tr> <tr><td style="text-align: center;">H</td><td></td></tr> <tr><td style="text-align: center;">Hydrogen</td><td></td></tr> <tr><td style="text-align: center;">1.0</td><td></td></tr> </table> | 1 | + | H | | Hydrogen | | 1.0 | | | | | | | | | | | | | | | | | | | | <table border="1" style="width: 100px; height: 100px;"> <tr><td style="text-align: center;">1</td><td style="text-align: right;">-</td></tr> <tr><td style="text-align: center;">H</td><td></td></tr> <tr><td style="text-align: center;">Hydrogen</td><td></td></tr> <tr><td style="text-align: center;">1.0</td><td></td></tr> </table> | 1 | - | H | | Hydrogen | | 1.0 | | <table border="1" style="width: 100px; height: 100px;"> <tr><td style="text-align: center;">18</td></tr> <tr><td style="text-align: center;">2 0</td></tr> <tr><td style="text-align: center;">He</td></tr> <tr><td style="text-align: center;">Helium</td></tr> <tr><td style="text-align: center;">4.0</td></tr> </table> | | 18 | 2 0 | He | Helium | 4.0 |
| 1 | + | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| H | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Hydrogen | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1.0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | - | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| H | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Hydrogen | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1.0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 18 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| He | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Helium | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4.0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | <table border="1" style="width: 100px; height: 100px;"> <tr><td style="text-align: center;">22</td><td style="text-align: right;">4+</td></tr> <tr><td style="text-align: center;">Ti</td><td style="text-align: right;">3+</td></tr> <tr><td style="text-align: center;">Titanium</td><td></td></tr> <tr><td style="text-align: center;">47.9</td><td></td></tr> </table> | | 22 | 4+ | Ti | 3+ | Titanium | | 47.9 | | ← Ion charge(s) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 22 | 4+ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Ti | 3+ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Titanium | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 47.9 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | Atomic Number → | | Symbol → | | Name → | | Atomic Mass → | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | 22 | | 4+ | | 3+ | | ← Ion charge(s) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | Titanium | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | 47.9 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---------------|--|--|--|--|--|--|--|--|--|-----------------------|--|--|--|--|--|--|--|-----------|--|----------|--|--------------|--|-------|--|-----------|--|-------|--|-------------|--|-------|--|-----------|--|-------|--|-----------|--|-------|--|------------|--|-------|--|-----------|--|-------|--|-------------|--|-------|--|-------------|--|----|--|-----------|--|----|--|-------------|--|----|--|-----------|--|----|--|------------|--|----|--|----|--|----|--|----|--|
| Alkali Metals | | | | | | | | | | Alkaline Earth Metals | | | | | | | | | | Halogens | | | | | | | | | | Noble Gases | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | 58 | | 3+ | | 4+ | | 59 | | 3+ | | 4+ | | 60 | | 3+ | | 61 | | 3+ | | 62 | | 3+ | | 4+ | | 63 | | 3+ | | 64 | | 3+ | | 65 | | 3+ | | 66 | | 3+ | | 67 | | 3+ | | 68 | | 3+ | | 69 | | 3+ | | 70 | | 3+ | | 71 | | 3+ | |
| | | | | | | | | | | | | | | | | | | Ce | | 4+ | | Pr | | 4+ | | Nd | | 4+ | | Pm | | 4+ | | Sm | | 4+ | | Eu | | 2+ | | Gd | | 2+ | | Tb | | 4+ | | Dy | | 3+ | | Ho | | 3+ | | Er | | 3+ | | Tm | | 2+ | | Yb | | 2+ | | Lu | | 3+ | | | | | | | |
| | | | | | | | | | | | | | | | | | | Cerium | | | | Praseodymium | | | | Neodymium | | | | Promethium | | (145) | | Samarium | | | | Europium | | | | Gadolinium | | | | Terbium | | | | Dysprosium | | | | Holmium | | | | Erbium | | | | Thulium | | | | Ytterbium | | | | Lutetium | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | 140.1 | | 140.9 | | 144.2 | | | | (145) | | 150.4 | | 152.0 | | 157.3 | | 158.9 | | 162.5 | | 164.9 | | 167.3 | | 168.9 | | 173.0 | | 175.0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | 90 | | 4+ | | 91 | | 5+ | | 92 | | 6+ | | 93 | | 5+ | | 94 | | 4+ | | 95 | | 3+ | | 96 | | 3+ | | 97 | | 3+ | | 98 | | 3+ | | 99 | | 3+ | | 100 | | 3+ | | 101 | | 2+ | | 102 | | 2+ | | 103 | | 3+ | | | | | | | |
| | | | | | | | | | | | | | | | | | | Th | | 4+ | | Pa | | 4+ | | U | | 4+ | | Np | | 3+ | | Pu | | 6+ | | Am | | 5+ | | Cm | | 5+ | | Bk | | 4+ | | Cf | | 3+ | | Es | | 3+ | | Fm | | 3+ | | Md | | 3+ | | No | | 3+ | | Lr | | 3+ | | | | | | | |
| | | | | | | | | | | | | | | | | | | Thorium | | | | Protactinium | | | | Uranium | | | | Neptunium | | | | Plutonium | | | | Americium | | | | Curium | | | | Berkelium | | | | Californium | | | | Einsteinium | | | | Fermium | | | | Mendelevium | | | | Nobelium | | | | Lawrencium | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | 232.0 | | 231.0 | | 238.0 | | (237) | | (244) | | (243) | | (247) | | (247) | | (247) | | (251) | | (252) | | (257) | | (257) | | (257) | | (258) | | (259) | | (259) | | (262) | | | | | | | | | | | | | | | | | | | | | | | | | | | |

Based on mass of C-12 at 12.00.

Any value in parentheses is the mass of the most stable or best known isotope for elements which do not occur naturally.