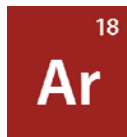


## Stable isotopes of argon available from ISOFLEX

| Isotope | Z(p) | N(n) | Atomic Mass | Natural Abundance | Enrichment Level | Physical Form |
|---------|------|------|-------------|-------------------|------------------|---------------|
| Ar-36   | 18   | 18   | 35.9675462  | 0.337%            | ≥99.90%          | Gas           |
| Ar-38   | 18   | 20   | 37.9627322  | 0.063%            | 99.90%           | Gas           |
| Ar-40   | 18   | 22   | 39.96238312 | 99.60%            | 99.99%           | Gas           |



Argon was discovered in 1894 by Sir William Ramsay and Lord Rayleigh. Its name derives from the Greek word *argos*, meaning "inactive." Today the chemical symbol for argon is *Ar*, but until 1957 its symbol was simply *A*.

Argon is a colorless and odorless gas that is present to a very small extent in the atmosphere. It is practically insoluble in water. It makes a good atmosphere for working with air-sensitive materials since it is heavier than air and less reactive than  $N_2$ . It is an effective "blanket" for the production of titanium and other reactive elements. It provides a protective atmosphere for growing silicon and germanium crystals.

Commercial applications for argon include its use in electric light bulbs and in fluorescent tubes. It is also used as an inert gas shield for arc welding and cutting.

### Properties of Argon

|                                 |               |
|---------------------------------|---------------|
| <b>Name</b>                     | Argon         |
| <b>Symbol</b>                   | Ar            |
| <b>Atomic number</b>            | 18            |
| <b>Atomic weight</b>            | 39.948        |
| <b>Standard state</b>           | Gas at 298 °K |
| <b>CAS Registry ID</b>          | 7440-37-1     |
| <b>Group in periodic table</b>  | 18            |
| <b>Group name</b>               | Noble gas     |
| <b>Period in periodic table</b> | 3             |
| <b>Block in periodic table</b>  | p-block       |

## Properties of Argon (continued)

|                               |                                     |
|-------------------------------|-------------------------------------|
| <b>Color</b>                  | Colorless                           |
| <b>Classification</b>         | Nonmetallic                         |
| <b>Melting point</b>          | -189.30 °C                          |
| <b>Boiling point</b>          | -185.80 °C                          |
| <b>Thermal conductivity</b>   | 0.01772 W/(m-K)                     |
| <b>Heat of vaporization</b>   | 6.50 kJ·mol <sup>-1</sup>           |
| <b>Heat of fusion</b>         | 1.18 kJ·mol <sup>-1</sup>           |
| <b>Density</b>                | 1.784 g/cm <sup>3</sup>             |
| <b>Electron configuration</b> | [Ne]3s <sup>2</sup> 3p <sup>6</sup> |
| <b>Oxidation state</b>        | 0                                   |